KV-27TS29/27TS32/27TS36

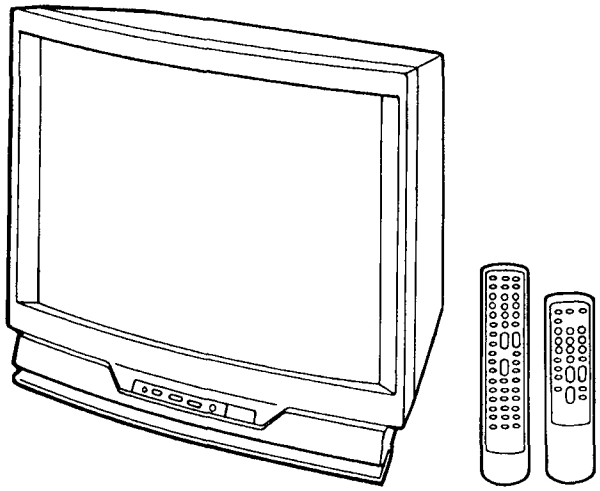
RM-Y116 RM-Y117 RM-Y118

KV-32TS36/32TS46

RM-Y118 RM-Y118

SA-W200

SERVICE MANUAL



US Model

KV-27TS29 Chassis No. SCC-F84C-A
KV-27TS32 Chassis No. SCC-F84E-A
KV-27TS36 Chassis No. SCC-F84D-A
KV-32TS36 Chassis No SCC-F84A-A
KV-32TS46 Chassis No SCC-F84B-A

Canadian Model

KV-27TS29 Chassis No. SCC-F85C-A
KV-27TS36 Chassis No. SCC-F85D-A
KV-32TS36 Chassis No. SCC-F85A-A
KV-32TS46 Chassis No. SCC-F85B-A

AA-1 CHASSIS

MODELS OF THE SAME SERIES	
KV-27TS29/27TS32/27TS36 KV-32TS36/32TS46	
KV-2970RS/2970M/2975M	

SPECIFICATIONS

Television system American TV standards

Channel coverage VHF 2–13
UHF 14–69
Cable TV 1–125

Picture tube Hi-Black™ Trinitron® tube
27-inch picture measured diagonally
29-inch picture tube measured diagonally (KV-27TS29/27TS32/27TS36)

32-inch picture measured diagonally
34-inch picture tube measured diagonally (KV-32TS36/32TS46)

Antenna 75-ohm external antenna terminal for VHF/UHF

Input

VIDEO and S VIDEO
S VIDEO IN (S terminal)
Y 1 Vp-p, 75-ohms unbalanced, sync negative
C 0 286 Vp-p (Burst signal), 75-ohms
Video (phono jacks) 1 Vp-p, 75-ohms unbalanced, sync negative
Audio (phono jacks) 500 mVrms (100% modulation)
Impedance: 47 kilohms

— Continued on next page —

MICROFILM

TRINITRON® COLOR TV

SONY®

Output AUDIO OUT (phono jacks)
More than 408 mVrms at the maximum volume setting (variable)
More than 408 mVrms (fix)
Impedances· 5 kilohms

Speaker output 5 W × 2

Audio frequency response : FRONT 80Hz - 20kHz

Power requirements 120 V AC, 60 Hz

Power consumption

KV-27TS29	165 W
KV-27TS32	165 W
KV-27TS36	170 W
KV-32TS36	195 W
KV-32TS46	205 W
standby mode	5 W

Dimensions/Weight

	Dimensions (w/h/d)	Weight
KV-27TS29	661 × 603 × 522 mm (26 1/8 × 23 3/4 × 20 5/8 in)	45 kg (99 lbs 4 oz)
KV-27TS32	661 × 603 × 522 mm (26 1/8 × 23 3/4 × 20 5/8 in)	45 kg (99 lbs 4 oz)
KV-27TS36	661 × 603 × 522 mm (26 1/8 × 23 3/4 × 20 5/8 in)	45 kg (99 lbs 4 oz)
KV-32TS36	781 × 712 × 612 mm (30 3/4 × 28 1/8 × 24 1/8 in)	71 kg (156 lbs 9 oz)
KV-32TS46	781 × 712 × 612 mm (30 3/4 × 28 1/8 × 24 1/8 in)	71 kg (156 lbs 9 oz)

Supplied accessories

(KV-27TS29)
Remote Commander RM-Y116(1) with 2 size AA (R6) EVEREADY batteries
(KV-27TS32)
Remote Commander RM-Y117(1) with 1 size AA (R6) EVEREADY battery
(KV-27TS36/32TS36/32TS46)
Remote Commander RM-Y118(1) with 1 size AA (R6) EVEREADY battery
(KV-32TS46)
Active Super Woofer

Recommended accessories

U/V mixer EAC-66
Connecting cable
VMC-810S/820S, VMC-720M, YC-15V/30V, RK-74A

Design and specifications are subject to change without notice.

WARNING!!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

ATTENTION!!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÁSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE.
LE CHÁSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ Á L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS ÁLA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MAPQUE ⚠ SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIECES CONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES RÉGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT SONT IDENTIFIES DANS LE PRÉSENT MANUEL. SUIVRE CES PROCÉDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT EST SUSPECTÉ.

SAFETY CHECK-OUT

(US Model only)

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the condition of the monopole antenna (if any).
   Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.
8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
9. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60–100 watts trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)

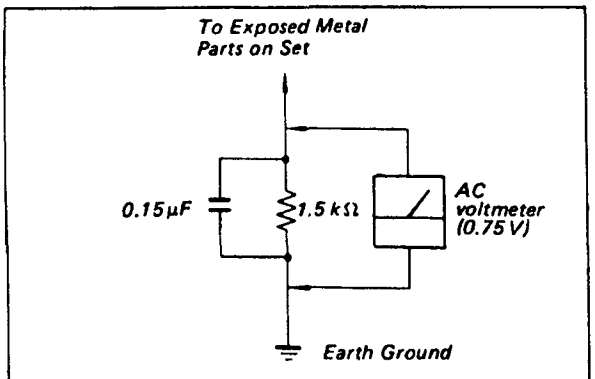


Fig. A. Using an AC voltmeter to check AC leakage.

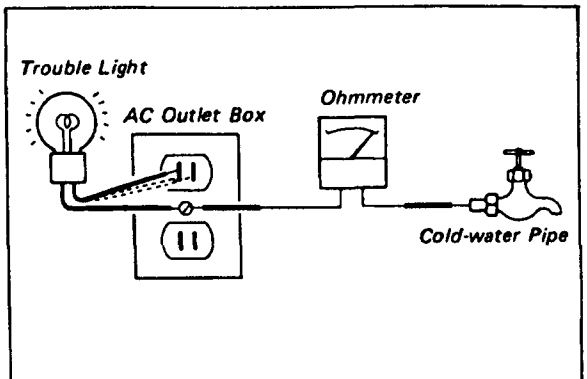


Fig. B. Checking for earth ground.

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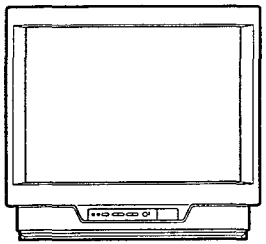
SECTION 1
GENERAL

This section is extracted from instruction manual.

1-1. INTRODUCTING THE SONY TRINITRON® COLOR TV

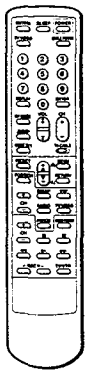
Design

KV-27TS29 KV-32TS36
KV-27TS32 KV-32TS46
KV-27TS36

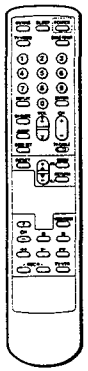


Supplied Remote Commander

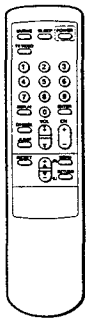
RM-Y118



RM-Y117



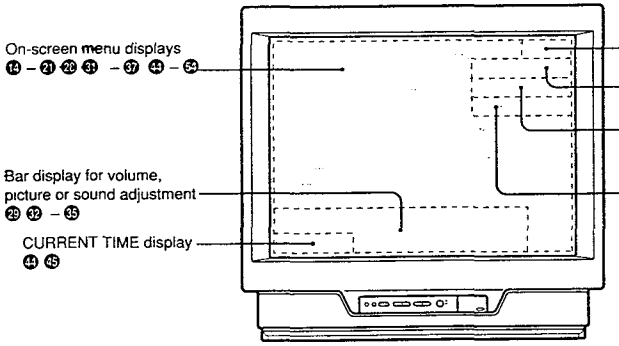
RM-Y116



1-2. LOCATING THE CONTROLS

Screen Displays

For details, see the pages indicated by the numbered black circles ●.

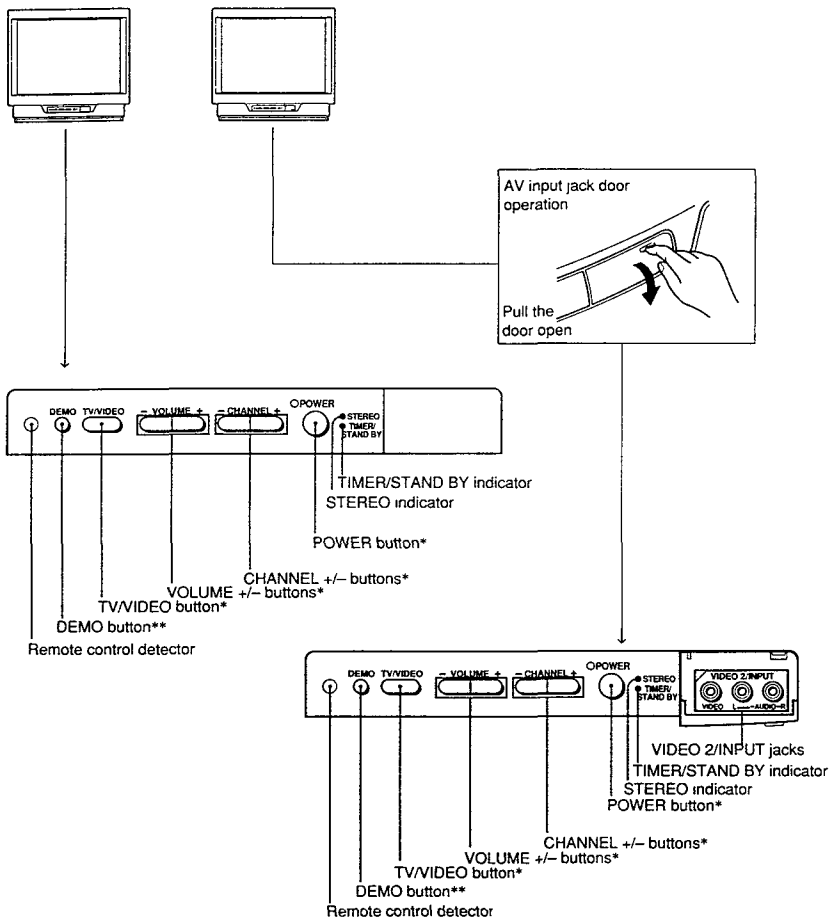

On-screen menu displays
⓮ – ㉑ ㉘ ㉝ – ㊲ ㊸ – ㊾
Bar display for volume, picture or sound adjustment
㉙ ㉜ – ㉟
CURRENT TIME display
㊹ ㊺
Channel number display
Main picture input mode
SLEEP, MUTING displays ㉚
CHANNEL CAPTION display
㊿ – ㊿
MTS mode (MAIN, SAP or MONO) ㊱
Picture-in-Picture input mode
(KV-27TS36/32TS36/32TS46/27TW77/27TW78/32TW77 only)
㊳ – ㊸

KV-32TS36
(The screen displays, except for certain features as noted above, are the same for all models.)

Front Panel

KV-27TS29

KV-27TS32 KV-27TS36
KV-32TS36 KV-32TS46

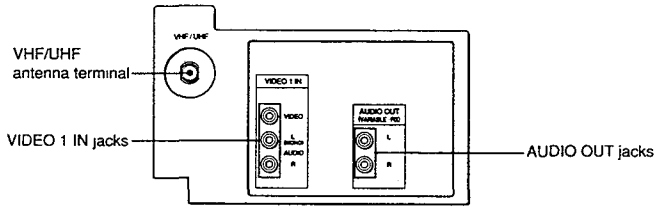


* Buttons with the same function are also located on the Remote Commander (pp. 10 – 11).

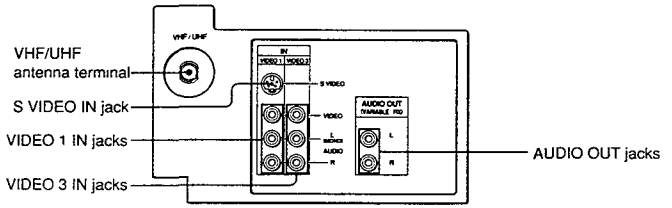
** If you press this button, functions and menues are displayed one by one. Press any button to stop DEMO.

Rear Panel

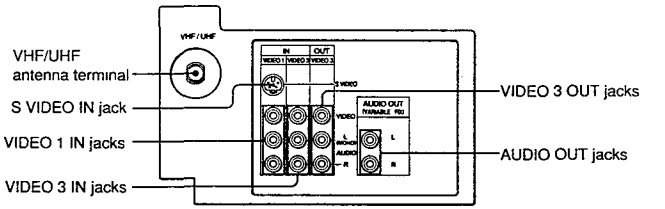
KV-27TS29



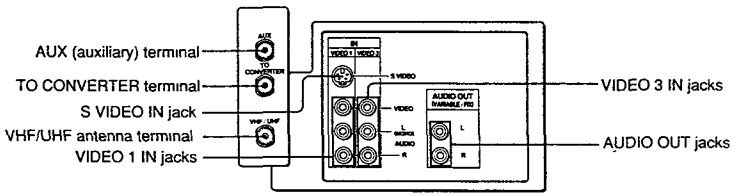
KV-27TS36 KV-32TS36



KV-27TS32

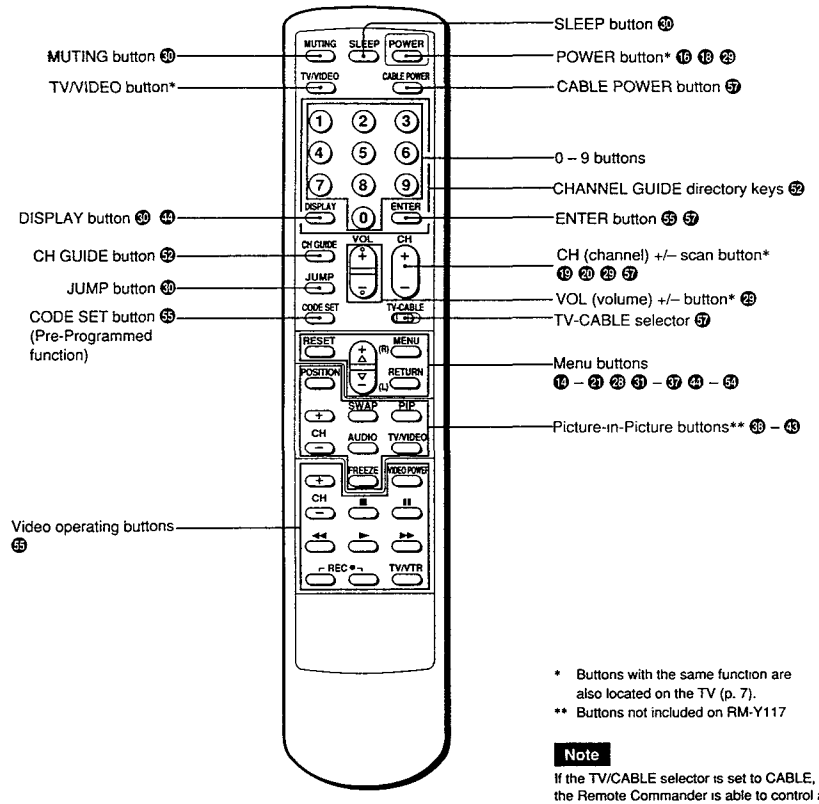


KV-32TS46



Remote Commander

For details, see the pages indicated by the numbered black circles ●.

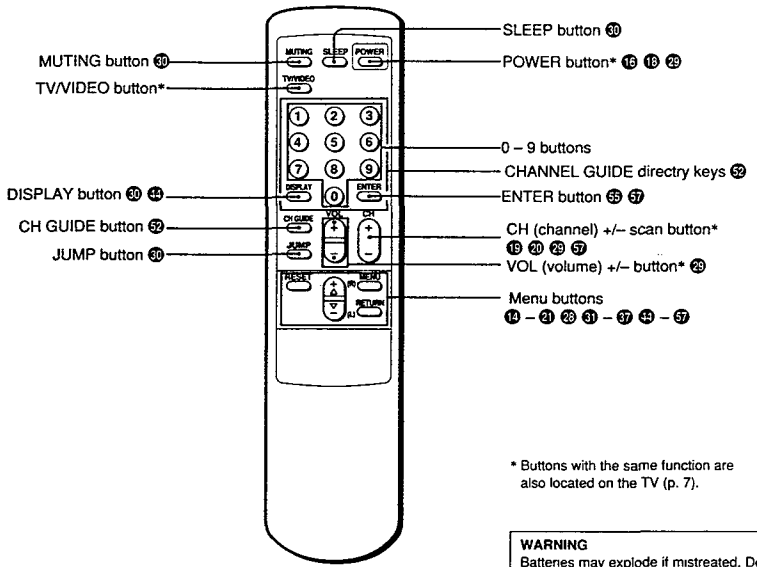

MUTING button ㉚
TV/VIDEO button*
DISPLAY button ㉚ ㊹
CH GUIDE button ㊷
JUMP button ㉚
CODE SET button ㊺
(Pre-Programmed function)
Video operating buttons ㊺
SLEEP button ㉚
POWER button* ⑯ ⑱ ㉙
CABLE POWER button ㊼
0 – 9 buttons
CHANNEL GUIDE directory keys ㊷
ENTER button ㊺ ㊼
CH (channel) +/– scan button* ⑲ ⑳ ㉙ ㊼
VOL (volume) +/– button* ㉙
TV-CABLE selector ㊼
Menu buttons ⑭ – ㉑ ㉘ ㉛ – ㊲ ㊹ – ㊾
Picture-in-Picture buttons** ㉞ – ㊸

RM-Y118: KV-27TS36 KV-32TS36 KV-32TS46
(**RM-Y117:** KV-27TS32)

* Buttons with the same function are also located on the TV (p. 7).
** Buttons not included on RM-Y117

Note

If the TV/CABLE selector is set to CABLE, the Remote Commander is able to control a connected cable box, not the TV . Set the selector to TV to control the TV set with the Remote Commander (You can use POWER button at any case).


MUTING button ㉚
TV/VIDEO button*
DISPLAY button ㉚ ㊹
CH GUIDE button ㊷
JUMP button ㉚
SLEEP button ㉚
POWER button* ⑯ ⑱ ㉙
0 – 9 buttons
CHANNEL GUIDE directry keys ㊷
ENTER button ㊺ ㊼
CH (channel) +/– scan button* ⑲ ⑳ ㉙ ㊼
VOL (volume) +/– button* ㉙
Menu buttons ⑭ – ㉑ ㉘ ㉛ – ㊲ ㊹ – ㊾

RM-Y116: KV-27TS29

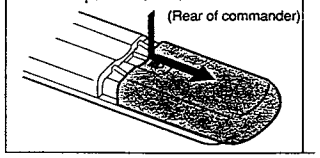
* Buttons with the same function are also located on the TV (p. 7).

WARNING
Batteries may explode if mistreated. Do not recharge, disassemble, or dispose of in fire.

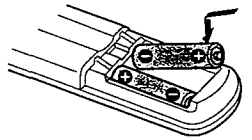
Installing Batteries

(RM-Y116)

1 Remove the battery compartment cover.

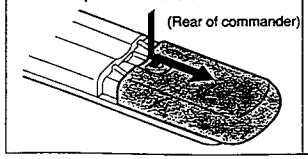


2 Insert two size AA (R6) batteries in correct polarity.

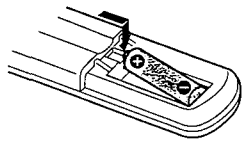


(RM-Y117, RM-Y118)

1 Remove the battery compartment cover.



2 Insert a size AA (R6) battery in correct polarity.



Battery life
With normal operation, batteries will last up to half a year. If the Remote Commander dose not operate properly, the batteries might be exhausted. Replace both of them with new ones.

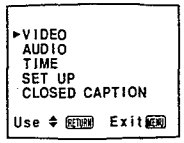
To avoid damage from possible battery leakage
Remove the batteries if you do not plan to use the Remote Commander for a fairly long time.

1-3. USING THE ON-SCREEN MENUS

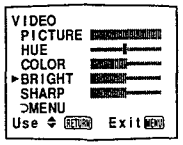
The following flow chart shows the different levels of on-screen menus that you can use to make various adjustments and settings. See the indicated pages for instructions on using each feature.

For picture quality adjustment

Main menu



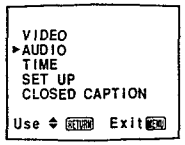
VIDEO menu (pp. 32–33)



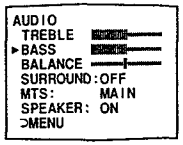
Adjustment bar

For sound quality adjustment

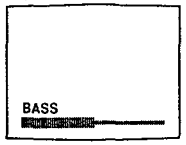
Main menu



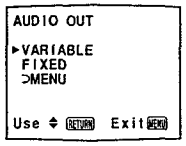
AUDIO menu (pp. 34–37)



Adjustment bar

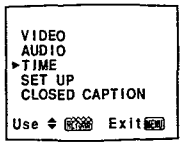


AUDIO OUT screen (p. 37)

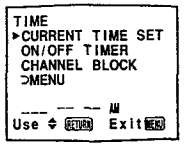


For time-related settings

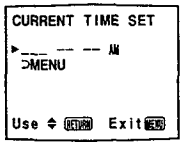
Main menu



TIME menu



CURRENT TIME SET screen (pp. 44–45)

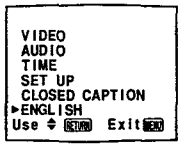


ON/OFF TIMER screen (pp. 46–47)

CHANNEL BLOCK screen (pp. 48–49)

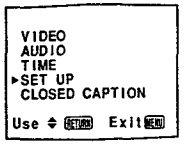
For language setting (p.16)
(KV-27TS32 only)

Main menu

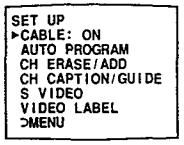


For presetting and other functions

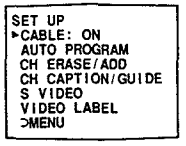
Main menu



SET UP menu



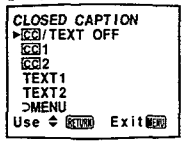
CABLE ON/OFF screen (p. 17)



For closed caption setting

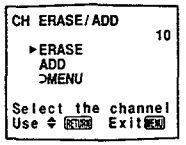
Main menu

CLOSED CAPTION screen (p. 31)

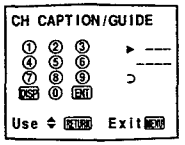


AUTO PROGRAM screen (p. 18)

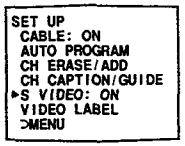
CHANNEL ERASE/ADD screen (pp. 19–21)



CHANNEL CAPTION/GUIDE screen (pp. 50–51)



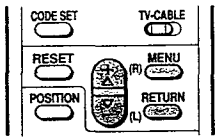
S VIDEO ON/OFF screen (p. 28)



VIDEO LABEL screen (pp. 53–54)

Navigating through the Menus

Remote Commander



To display the main menu
Press MENU.

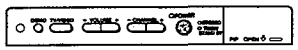
To return to the previous menu
Press △+ or ▽– to select "⮌ MENU."
Then press RETURN.

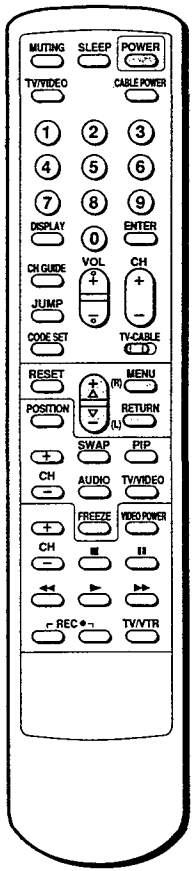
To return to the main menu
Repeat the above, until you reach the main menu.

To return to the normal screen
Press MENU on the Remote Commander.

Note

The menus disappear automatically if you do not press a button within 90 seconds.
The menu you cannot select appears in black.





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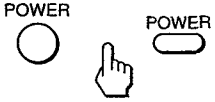
To return to the normal screen
Press MENU.

Changing the Menu Language (KV-27TS32/2970RS only)

The menu language is factory-set to ENGLISH. Follow these instructions to change the menu language to Spanish or back to English.

1 Press POWER on the TV or the Remote Commander to turn the TV on.

POWER

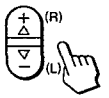


2 Press MENU.
The main menu appears.

MENU

```
▶VIDEO
 AUDIO
 TIME
 SET UP
 CLOSED CAPTION
 ENGLISH
Use ◆ RETURN  Exit MENU
```

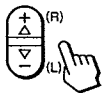
3 Press △+ or ▽– to select ENGLISH.
Then press RETURN.



RETURN

```
 VIDEO
 AUDIO
 TIME
 SET UP
 CLOSED CAPTION
 ENGLISH
Use ◆ RETURN  Exit MENU
```

4 Press △+ or ▽– to select language.
Each time you press △+ or ▽–,
ESPAÑOL and ENGLISH menus appear.




```
 VIDEO
 AUDIO
 HORA
 AJUSTES
 CLOSED CAPTION
 ESPAÑOL
Usar ◆ RETURN  Salir MENU
```

```
 VIDEO
 AUDIO
 TIME
 SET UP
 CLOSED CAPTION
 ENGLISH
Use ◆ RETURN  Exit MENU
```

Note

Certain parts of the ESPAÑOL menus remain in English.

5 Press RETURN.
The language is selected.

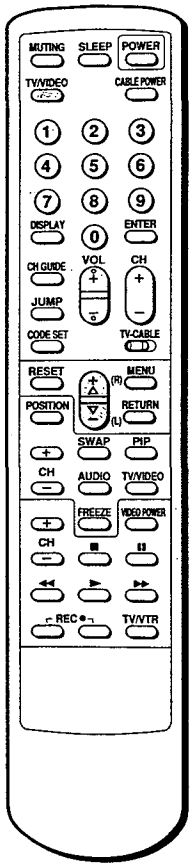
RETURN

```
 VIDEO
 AUDIO
 HORA
 AJUSTES
 CLOSED CAPTION
▶ESPAÑOL
Usar ◆ RETURN  Salir MENU
```

Spanish menu

1-4. TURNING THE CABLE MODE ON OR OFF

All of the controls are on the Remote Commander.



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To return to the normal screen
Press MENU.

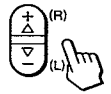
If you have cable connected to your TV (pp.12–13), follow the steps below to turn the cable connection on or off. CABLE is preset to ON when you use your TV for the first time. Then turn CABLE to OFF to preset or watch VHF or UHF channels (pp.18-21 and 29).

1 Press MENU.
The main menu appears.

MENU

```
▶VIDEO
 AUDIO
 TIME
 SET UP
 CLOSED CAPTION
Use ◆ RETURN  Exit MENU
```

2 Press △+ or ▽– to select SET UP.




```
 VIDEO
 AUDIO
 TIME
▶SET UP
 CLOSED CAPTION
Use ◆ RETURN  Exit MENU
```

Press RETURN.
The SET UP menu appears, and the cursor points to "CABLE".

RETURN

```
SET UP
▶CABLE: ON
 AUTO PROGRAM
 CH ERASE/ADD
 CH CAPTION/GUIDE
 S VIDEO
 VIDEO LABEL
 >MENU
```

Note

If the CABLE display appears in black, the TV is in VIDEO mode and you cannot select CABLE. Press TV/VIDEO to change to TV mode.

3 Press RETURN again.

RETURN

```
SET UP
▶CABLE: ON
 AUTO PROGRAM
 CH ERASE/ADD
 CH CAPTION/GUIDE
 S VIDEO
 VIDEO LABEL
 >MENU
```

Press △+ or ▽– to select ON or OFF alternately.

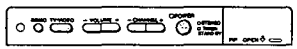
```
SET UP
 CABLE: ON
 AUTO PROGRAM
 CH ERASE/ADD
 CH CAPTION/GUIDE
 S VIDEO
 VIDEO LABEL
 >MENU
```

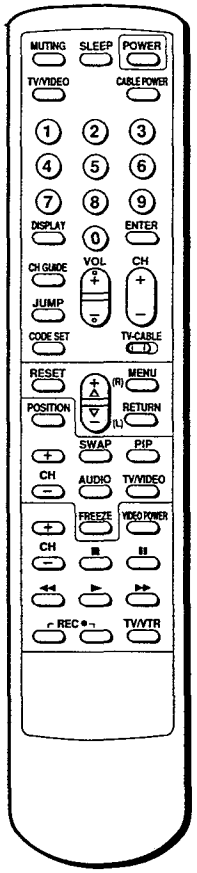
↔

```
SET UP
 CABLE: OFF
 AUTO PROGRAM
 CH ERASE/ADD
 CH CAPTION/GUIDE
 S VIDEO
 VIDEO LABEL
 >MENU
```

Press RETURN.
The setting is completed.

1-5. PRESETTING TV CHANNELS





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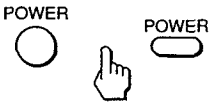
Channels that can be received on this TV:

VHF	UHF	Cable
2-13	14-69	1-125

Presetting TV Channels Automatically

1 Press POWER on the TV or the Remote Commander to turn the TV on.



2 Set the cable connection on or off, depending on if you want to preset cable or VHF/UHF channels.
(Follow the steps in "Turning the Cable Mode On or Off", p.17)

If "VIDEO" is displayed on the screen, press the TV/VIDEO button on the TV or the Remote Commander so that a channel number appears.

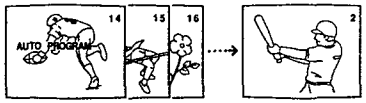
3 Press MENU.
The main menu appears.

```
▶VIDEO
 AUDIO
 TIME
 SET UP
 CLOSED CAPTION
Use ≑ RETURN Exit MENU
```

4 Press △+ or ▽– to select SET UP
Then press RETURN.
The SET UP menu appears.

```
SET UP
▶CABLE: ON
 AUTO PROGRAM
 CH ERASE/ADD
 CH CAPTION/GUIDE
 S VIDEO
 VIDEO LABEL
 >MENU
```

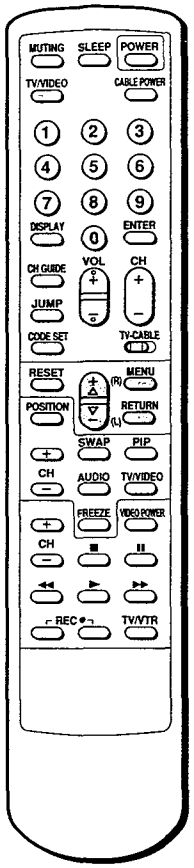
5 Press △+ or ▽– to select AUTO PROGRAM.
Then press RETURN.




```
SET UP
 CABLE: ON
▶AUTO PROGRAM
 CH ERASE/ADD
 CH CAPTION/GUIDE
 S VIDEO
 VIDEO LABEL
 >MENU
```

"AUTO PROGRAM" appears on the screen and receivable channels (other than the channels already preset) are preset in numerical sequence. The channels previously preset will not remain in the TV's memory.
When no more channels can be found, the programming stops and the lowest numbered channel is displayed.

To erase unnecessary channels, or to add channels that could not be preset automatically because their signal was too weak, follow the steps in "Erasing Unnecessary Channels — CHANNEL ERASE" (pp.19–20) and "Presetting Only Desired Channels — CHANNEL ADD" (p. 21).



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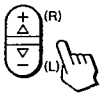
Erasing Unnecessary Channels—CHANNEL ERASE

Use this feature to erase unnecessary TV channels, so that when you press CH +/–, the channel(s) are skipped.

1 Press MENU.
The main menu appears.

```
▶VIDEO
 AUDIO
 TIME
 SET UP
 CLOSED CAPTION
Use ≑ RETURN Exit MENU
```

2 Press △+ or ▽– to select SET UP

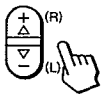



```
 VIDEO
 AUDIO
 TIME
▶SET UP
 CLOSED CAPTION
Use ≑ RETURN Exit MENU
```

Press RETURN.
The SET UP menu appears.

```
SET UP
▶CABLE: ON
 AUTO PROGRAM
 CH ERASE/ADD
 CH CAPTION/GUIDE
 S VIDEO
 VIDEO LABEL
 >MENU
```

3 Press △+ or ▽– to select CH ERASE/ADD.




```
SET UP
 CABLE: ON
 AUTO PROGRAM
▶CH ERASE/ADD
 CH CAPTION/GUIDE
 S VIDEO
 VIDEO LABEL
 >MENU
```

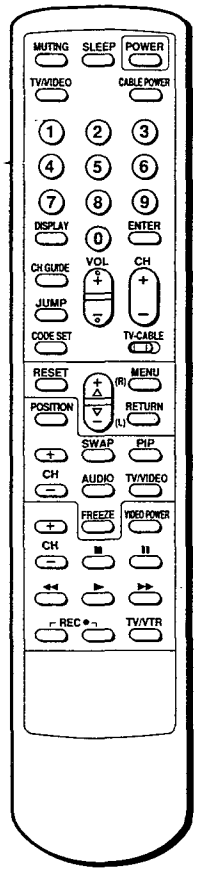
Press RETURN.
The CH ERASE/ADD screen appears, and the cursor points to "ERASE".

```
CH ERASE/ADD
                10
 ▶ERASE
  ADD
  >MENU

Select the channel
Use ≑ RETURN Exit MENU
```

Note

If CH ERASE/ADD display appears in black, the TV is in video mode and you cannot select CH ERASE/ADD.
Press TV/VIDEO to change to TV mode.



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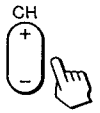
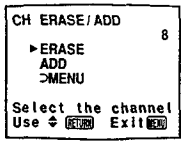
To return to the normal screen
Press MENU.

Note

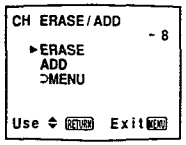
When you erase a VHF or UHF channel, the cable TV channel with the same number is also erased, and vice versa.

4 Press the CH +/– button to select the channel you want to erase.
For example, to erase channel 8, press CH +/– until 8 appears.





Press RETURN.
A "–" sign appears in front of the channel number display, indicating that the channel is erased from the channel scan memory.



The next time you press the CH +/– buttons, channel 8 will be skipped.

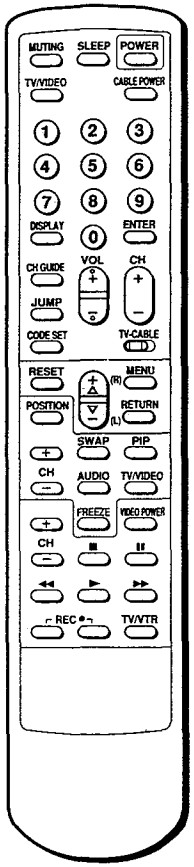
To erase other channels
Repeat step 4.

Cable TV channel chart*
Cable TV systems use letters or numbers to designate channels. To tune in a channel, refer to the chart below.

Number on this TV	Corresponding cable TV channel
1	A-8
5	A-7
6	A-6
14	A
15	B
16	C
17	D
18	E
19	F
20	G
21	H
22	I
23	J
24	K
25	L
26	M
27	N
28	O
29	P
30	Q
31	R
32	S

Number on this TV	Corresponding cable TV channel
33	T
34	U
35	V
36	W
37	W+1
38	W+2
39	W+3
⋮	⋮
93	W+57
94	W+58
95	A-5
96	A-4
97	A-3
98	A-2
99	A-1
100	W+59
101	W+60
102	W+61
⋮	⋮
123	W+82
124	W+83
125	W+84

* This designation of cable TV channels conforms to the EIA/NCTA recommendation. Check with your local cable TV company for more complete information on the available channels.



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To return to the normal screen
Press MENU.

Note

If you add a VHF or UHF channel, the cable TV channel with the same number is also added, and vice versa.

Presetting Only Desired Channels—CHANNEL ADD

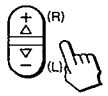
Use this feature to add channels one by one to the channel scan memory.

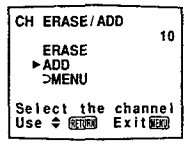
1-3 (Follow steps 1–3 in "Erasing Unnecessary Channels—CHANNEL ERASE," p.19.)

Note

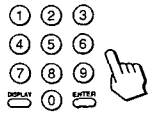
If the CH ERASE/ADD display appears in black, the TV is in video mode and you cannot select CHANNEL ERASE/ADD.
Press TV/VIDEO to change to TV mode.

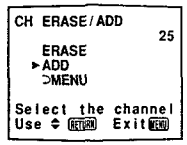
4 Press △ + or ▽ – to select ADD.



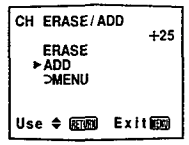


5 Press 0–9 and ENTER to select the channel you want to add.
For example, to add channel 25, press 2, 5 and ENTER.





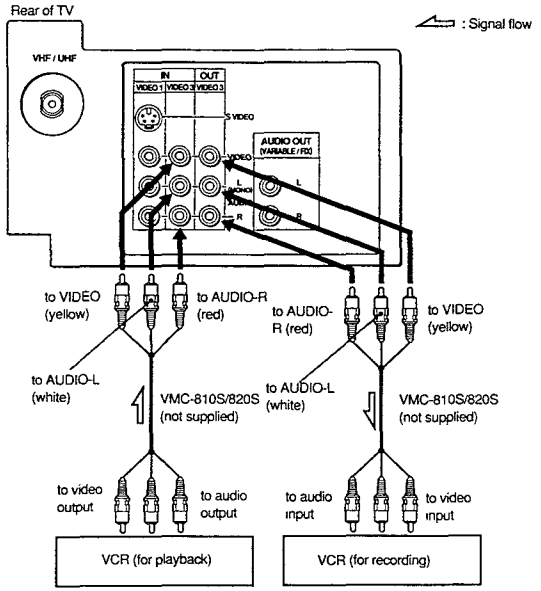
Press RETURN.
A "+" sign appears in front of the channel number display, indicating that the channel is added to the channel scan memory.



To add other channels
Repeat step 5.

1-6. CONNECTING OTHER EQUIPMENT

Connecting two VCRs for tape editing (KV-27TS32 only)



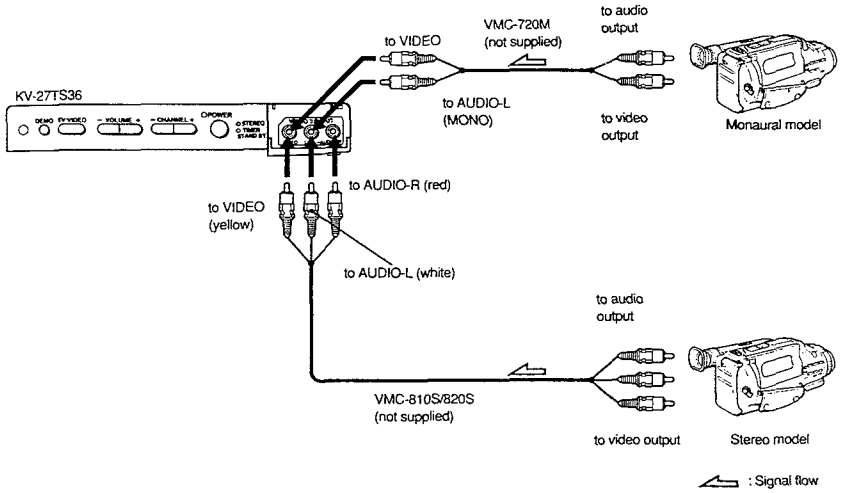
Watching a different image while duplicating

You can duplicate your recorded tapes by connecting two VCRs.
The VIDEO 3 OUT jacks only output the signal from the VIDEO 3 IN jacks. Connect a VCR for playback to VIDEO 3 IN jacks, and a VCR for recording to the VIDEO 3 OUT jacks. You can watch a TV program or images from VIDEO 1 IN or VIDEO 2 IN during duplicating.

To watch a different input image
Press TV/VIDEO on the TV or on the Remote Commander to select the input image you want to watch.

Connecting camcorders (except for KV-27TS29)

Playing back recorded tapes

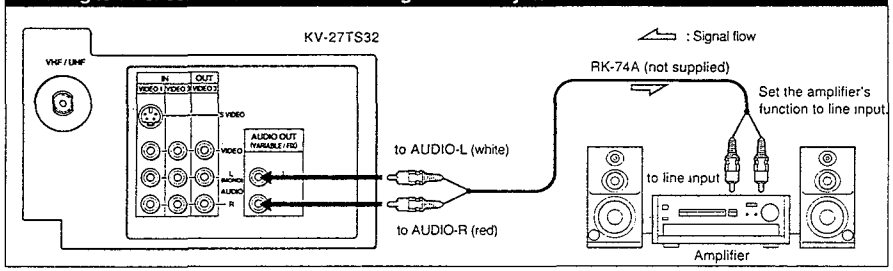


Preparing for use

Same as p. 23.

Audio System

Listening to TV or connected VCR sound through an audio system



Preparing for use

Display the mode set menu and set SPEAKER to OFF to cut off the TV speaker sound (p. 37), and listen to the TV's sound solely through the audio system speakers.

Note

By setting AUDIO OUT variable, you can adjust the bass, treble and balance, or select surround or an MTS (Multichannel TV Sound) mode, using the on-screen menus (pp. 34–36).

Connecting active super woofer (supplied with KV-32TS46 only)

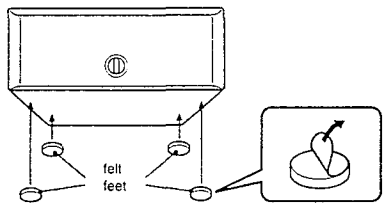
Preparing for use

To enjoy the active super woofer sound, make sure the connections are made as illustrated on the next page.

The woofer volume varies according to the TV volume. Adjust the woofer level control properly.

The active super woofer outputs the signal input to its AUDIO IN jacks. If you connect an audio system to the active super woofer's AUDIO OUT jacks, you can enjoy the sound from the audio system and the active super woofer simultaneously.

To make the active super woofer stable, attach the felt feet (supplied) to the bottom.

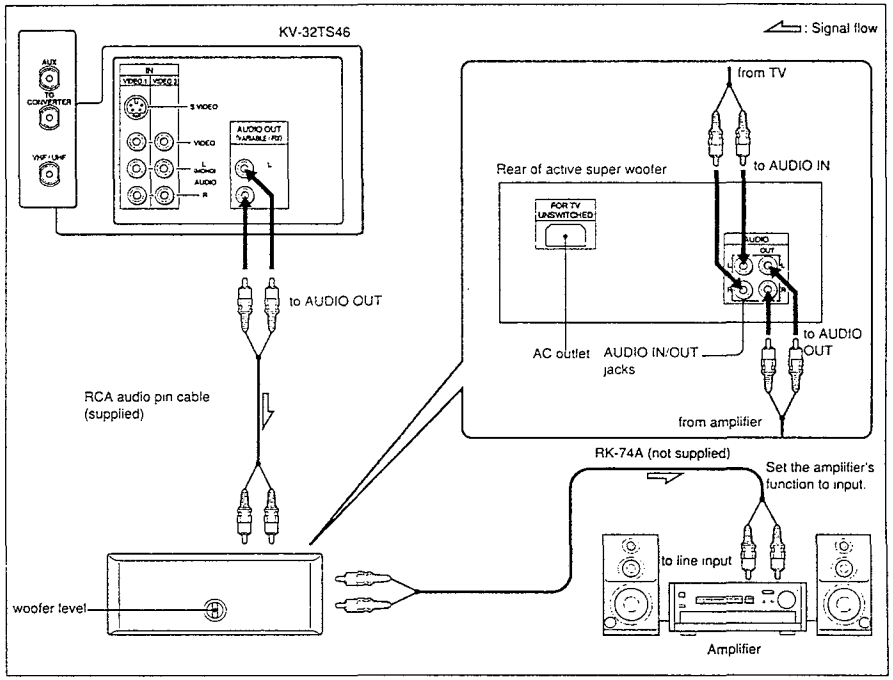


Notes

- Do not place the woofer on the TV set. To enjoy good sound, place the woofer on a hard object near the TV avoiding soft objects like carpets, sofas, etc.
- If you do not use the TV for more than 20 seconds, the active super woofer is turned off automatically to save on power consumption.
- When you release MUTING, the sound of the woofer is heard before that of the TV. This is normal.
- If you set SPEAKER to OFF in the AUDIO menu and select FIX in the AUDIO OUT menu (p.37), the volume of the woofer may be excessive. We recommend that you set SPEAKER to ON when you use the active super woofer.
- You should only connect the KV-32TS46 to the AC outlet on the active super woofer.

Active Super Woofer Specification

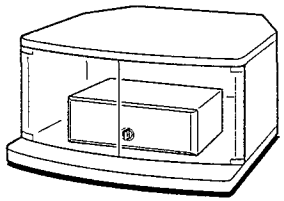
Input:	500 mVrms (100% modulation)
Output:	500 mVrms (100% modulation)
Impedance:	20 kilohms
Speaker output:	9 W (100 Hz)
Dimensions:	435 × 165 × 164 mm (W × H × D) (17¼ × 6½ × 6½ in.)
Mass:	3.9 kg (8 lbs 10 oz)



Using TV stand

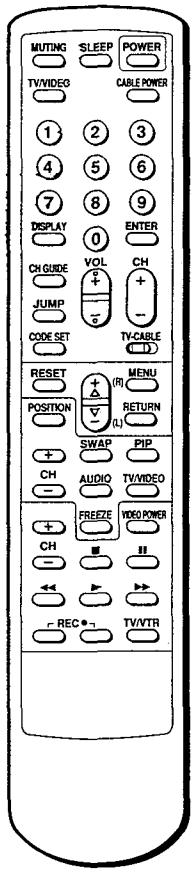
When you place the active super woofer on a TV stand (not supplied), remove the rear panel of the stand.

Sony or other manufacture's stand



Note

For good sound quality, avoid placing the stand in front of a curtain or close to a wall.



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To return to the normal screen
Press MENU.

Note

If you set S VIDEO to ON, the TV automatically receives S video signals whenever a VCR with S video is connected.

Watching a Video with Your S Video-Equipped VCR (except for KV-27TS29/2970RS)

Use this feature to set S VIDEO to ON or OFF depending on the kind of video equipment you have connected to the TV. For instructions on connecting video equipment, see pp.22–25.

Note

If the TV is in TV, VIDEO 2 or VIDEO 3 mode, the S VIDEO display appears in black and cannot be selected.
Press TV/VIDEO to change to VIDEO 1 mode.

1 Press MENU.
The main menu appears.

MENU

```
▸VIDEO
 AUDIO
 TIME
 SET UP
 CLOSED CAPTION
Use ♦ RETURN  Exit MENU
```

2 Press △+ or ▽– to select SET UP

(R) (L)

```
 VIDEO
 AUDIO
 TIME
▸SET UP
 CLOSED CAPTION
Use ♦ RETURN  Exit MENU
```

Press RETURN.
The SET UP menu appears.

RETURN

```
SET UP
▸CABLE: ON
 AUTO PROGRAM
 CH ERASE/ADD
 CH CAPTION/GUIDE
 S VIDEO: ON
 VIDEO LABEL
 >MENU
```

3 Press △+ or ▽– to select S VIDEO.
Then press RETURN.

(R) (L) RETURN

```
SET UP
 CABLE: ON
 AUTO PROGRAM
 CH ERASE/ADD
 CH CAPTION/GUIDE
▸S VIDEO: ON
 VIDEO LABEL
 >MENU
```

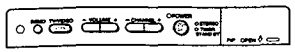
Press △+ or ▽– to select ON or OFF alternately.

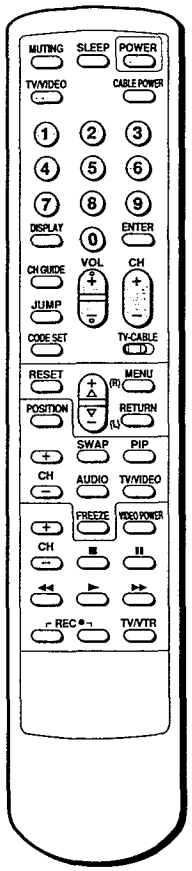
```
SET UP
 CABLE: ON
 AUTO PROGRAM
 CH ERASE/ADD
 CH CAPTION/GUIDE
 S VIDEO: ON
 VIDEO LABEL
 >MENU
```

↔

```
SET UP
 CABLE: ON
 AUTO PROGRAM
 CH ERASE/ADD
 CH CAPTION/GUIDE
 S VIDEO: OFF
 VIDEO LABEL
 >MENU
```

Press RETURN.
The setting is completed.





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1-7. WATCHING TV PROGRAMS

1 Press POWER on the TV or the Remote Commander to turn the TV on.
The TIMER/STAND BY indicator blinks until the picture appears.

POWER POWER

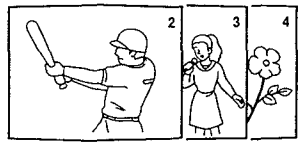
2 Turn the cable mode on or off to select the type of channel you want to watch, VHF/UHF or cable TV.
(Follow the steps in "Turning the Cable Mode On or Off," p. 17.)

If "VIDEO" or "S VIDEO" is displayed on the screen, press the TV/VIDEO button on the TV or on the Remote Commander so that the channel number appears.

3 Select a channel in one of the following two ways:

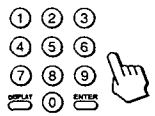
To scan the preset channels* in numerical sequence
Press CH +/–

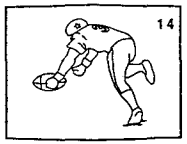
CH



* For more information on presetting channels, see pp. 18 – 21.

To select a channel directly
Press 0 – 9 and ENTER.
For example, to select channel 14, press 1, 4 and ENTER.

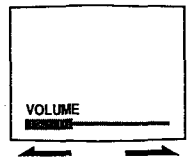




4 Press VOL +/– to adjust the volume.

VOL

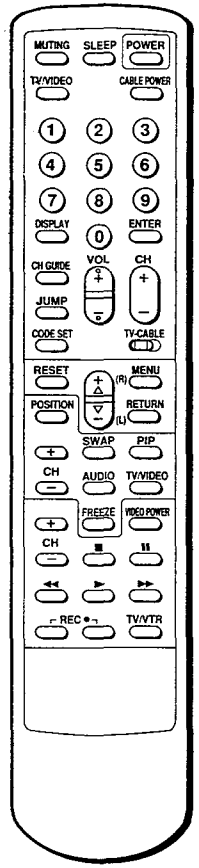
The display will disappear automatically after 3 seconds.



Press + to increase the volume.
Press – to decrease the volume.

To turn off the TV
Press POWER on the TV or the Remote Commander again.

1-8. USING CONVENIENT FEATURES



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Muting the Sound — MUTING

Press MUTING.
The display "MUTING" will appear on the screen.

MUTING

To restore the sound
Press MUTING again, or press VOL +.

Keeping the Displays On-Screen — DISPLAY

To display the channel
Press DISPLAY.
All the existing displays appear: channel number, channel caption (if set), MTS mode ("SAP" only), window picture input mode and the current time ("AM" or "PM" disappears after about three seconds).

DISPLAY

To cancel the display
Press DISPLAY again.
The channel display will disappear.

Using the Sleep Timer — SLEEP

The sleep timer turns off the TV automatically after the amount of time you select.

Press SLEEP
Each time you press SLEEP, the time increments "30", "60", "90" and "OFF" mode appear in sequence.

SLEEP

SLEEP 30
SLEEP 60
SLEEP 90
SLEEP OFF

The SLEEP display appears about one minute before the TV turns off.

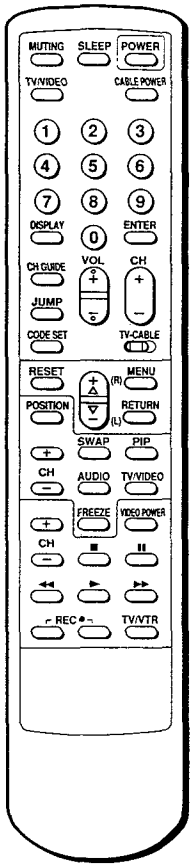
To cancel the setting
Press SLEEP until "OFF" mode appears.
The "SLEEP OFF" display appears for about three seconds.
OR
Turn the TV off.
The sleep timer setting is cancelled.

Switching Quickly Between Two Channels—JUMP

Press JUMP once to recall the channel you were watching previously. Press JUMP again to switch back. Use this feature to keep track of two programs alternately.

JUMP

1-9. USING CLOSED CAPTION (U.S.A. models only)



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1 Press MENU.
The main menu appears.

MENU

```
▸VIDEO
 AUDIO
 TIME
 SET UP
 CLOSED CAPTION
Use ≑ RETURN Exit MENU
```

2 Press △+ or ▽– to select CLOSED CAPTION.
Then press RETURN.
The CLOSED CAPTION screen appears.

(R) (L)

RETURN

```
CLOSED CAPTION
▸CC/TEXT OFF
 CC1
 CC2
 TEXT1
 TEXT2
 ↩MENU
Use ≑ RETURN Exit MENU
```

3 Press △+ or ▽– to select closed caption mode.

(R) (L)

Select CC1 or CC2 to view Captions. A Caption is a printed version of the dialogue or sound effects of a program. (The mode should be set to CC1 for most programs.)

```
CLOSED CAPTION
 CC/TEXT OFF
▸CC1
 CC2
 TEXT1
 TEXT2
 ↩MENU
Use ≑ RETURN Exit MENU
```

Select TEXT1 or TEXT2 to view Text. Text is information that is presented using the half to full television screen. It is usually not related to the program.

```
CLOSED CAPTION
 CC/TEXT OFF
 CC1
 CC2
▸TEXT1
 TEXT2
 ↩MENU
Use ≑ RETURN Exit MENU
```

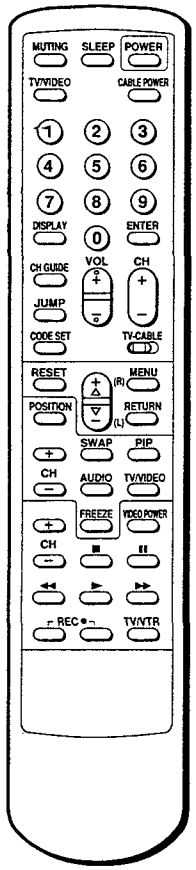
Select CC/TEXT OFF if you do not want to use the CLOSED CAPTION mode.

```
CLOSED CAPTION
▸CC/TEXT OFF
 CC1
 CC2
 TEXT1
 TEXT2
 ↩MENU
Use ≑ RETURN Exit MENU
```

Press RETURN.
The setting is completed.

RETURN

1-10. WATCHING TWO PICTURES AT ONCE (Picture-in-Picture)



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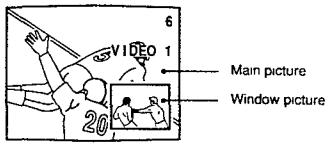
Note

To operate your VCR with the supplied Remote Commander, See "Using the Pre-Programmed Remote Commander", pp. 55–57.

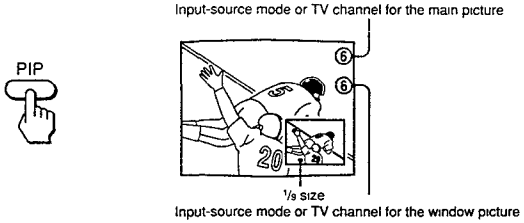
You can watch both the main picture and a window picture simultaneously by using the Picture-in-Picture (PIP) function.
Model KV-32TS46 is equipped with two-tuner PIP, allowing you to watch two TV channels at once.
Other models are equipped with one-tuner PIP. To watch two different TV channels, you must first connect a VCR to the TV, to watch a second TV channel through the VCR tuner. (See"Connecting Other Equipment", pp. 22–27.)



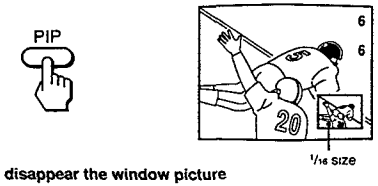
Picture-in-Picture special features
When watching the main picture and a window picture, you can:
- Swap the main and window pictures (SWAP).
- Change the position of the window picture (POSITION).
- Display a still picture as a window (FREEZE).
- Choose the sound from the main or window picture (AUDIO).

Displaying a window picture—PIP

Press PIP to display a window picture



Press PIP again to display a smaller window picture

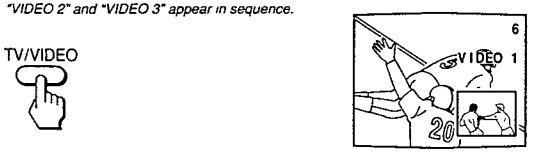


To disappear the window picture
Press PIP once more.

Changing the window picture input mode

1 Press PIP to display a window picture.

2 Press TV/VIDEO in the Picture-in-Picture control area to select the input mode.
Each time you press TV/VIDEO, "TV", "VIDEO 1", "VIDEO 2" and "VIDEO 3" appear in sequence.



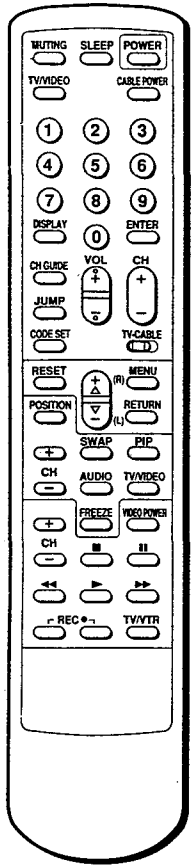
A window picture will appear in the same input mode as the last time you used PIP

To receive the window picture sound
Press AUDIO.
The ♪ display appears for a few seconds, indicating that the window picture sound is being received.

To restore the main picture sound
Press AUDIO again.

Notes

- If the main picture is not receiving an image, the window picture may be in black and white.
- When you turn PIP on or when you turn the TV on with PIP mode on the window picture will appear at the bottom right of the screen.
- The window picture may be affected by the condition of the main picture.
- The window picture sound is also output from the VARIABLE/FIX AUDIO OUT jacks.



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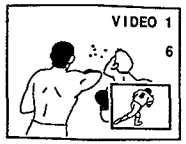
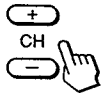
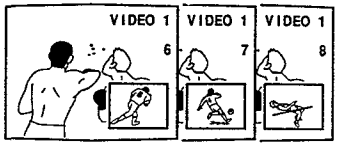
Changing TV channels in the window picture

1 Press PIP to display a window picture.



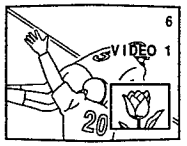
2 Press CH +/– in the PIP control area.



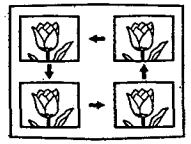


Changing the position of the window picture—POSITION

1 Press PIP to display a window picture.



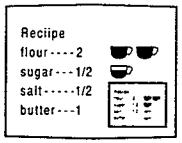
2 Press POSITION.
Each time you press POSITION, the window picture will move counterclockwise on the screen, as illustrated below.



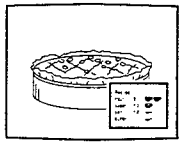
Displaying a still picture — FREEZE

Use the FREEZE function to display a still picture as a window. This function is useful when you want to write down a recipe from a cooking program, a displayed address or a phone number and so on.

1 Press PIP to display a window picture.



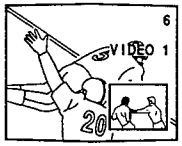
2 Press FREEZE.
The window picture image remains still on the screen.



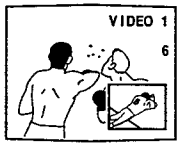
To restore the normal picture
Press FREEZE again.

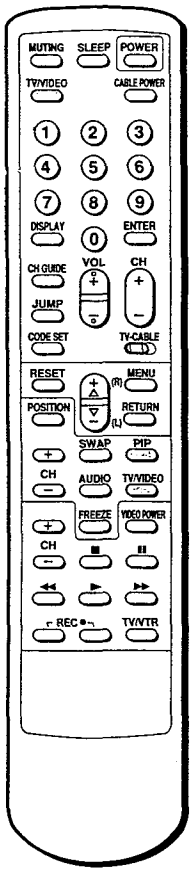
Swapping the main and window pictures — SWAP

1 Press PIP to display a window picture.



2 Press SWAP.
Each time you press SWAP, the images from the main and window pictures switch places.



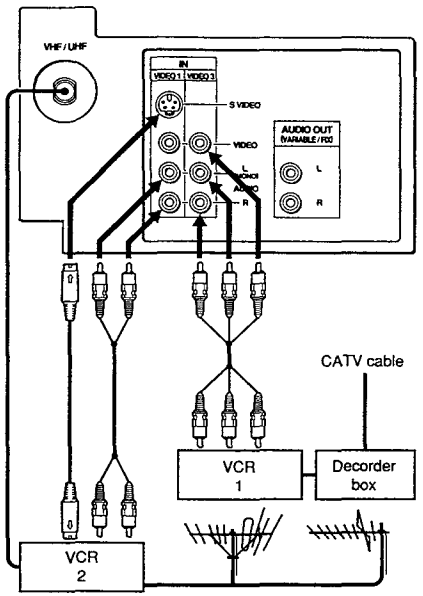


RM-Y118

Displaying a pay cable TV channel as a window picture

To display a pay cable TV channel as a window picture, connect your decorder box as illustrated below.

Connection



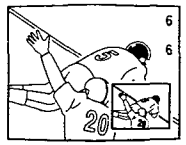
Note

The channels being received through the AUX terminal cannot be displayed as a window picture. (KV-32TS46 only)

After making the connections, turn the cable mode on by following the steps "Turning the Cable Mode On or Off", p. 17. Then continue with steps below.

1 Press PIP to display a window picture.

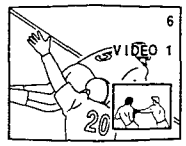
PIP



2 Press TV/VIDEO in the Picture-in-Picture control area to select the input mode.

Each time you press TV/VIDEO, "TV", "VIDEO 1" "VIDEO 2" and "VIDEO 3" appear in sequence.

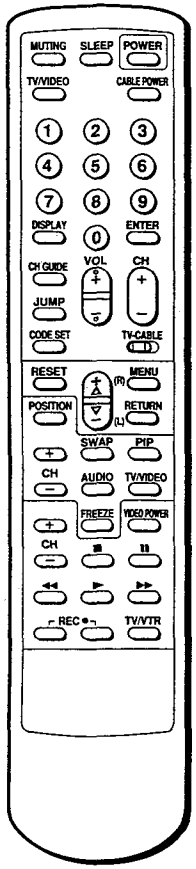
TV/VIDEO



3 Put your VCR on an inactive channel (CH 3 or 4).

4 Change pay cable TV channels with the decorder box.

1-11. USING THE TIMER-ACTIVATED FUNCTIONS



RM-Y118

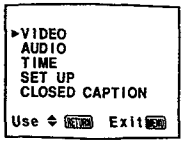
Setting the Clock—CURRENT TIME SET

Follow these instructions to set the current time. The correct time must be set in order to use the timer-activated functions (ON/OFF TIMER, CHANNEL BLOCK).

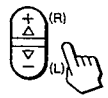
EXAMPLE: Set the time to 3:15 PM, Monday.

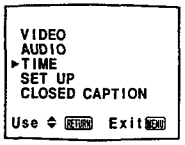
1 Press MENU.
The main menu appears.

MENU



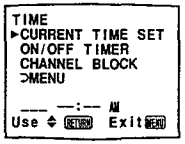
2 Press △+ or ▽– to select TIME.





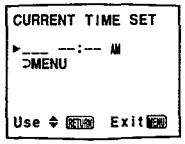
Press RETURN.
The TIME menu appears, and the cursor points to "CURRENT TIME SET"

RETURN



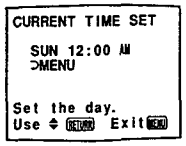
3 Press RETURN.
The CURRENT TIME SET screen appears.

RETURN

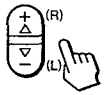


4 Press RETURN again.
"Set the day." appears on the screen.

RETURN

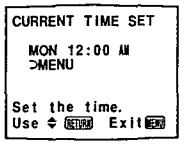


5 Press △+ or ▽– to set the day.
Each time you press △+ or ▽–, the day changes consecutively.

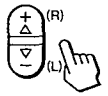


Press RETURN.
"Set the time." appears on the screen.

RETURN

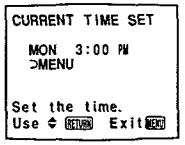


6 Press △+ or ▽– to set the hour.
Each time you press △+ or ▽–, the hour changes starting with "12:00 AM."

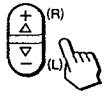


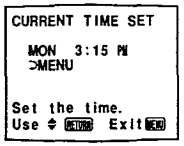
Press RETURN.

RETURN



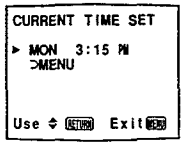
7 Press △+ or ▽– to set the minutes.
Each time you press △+ or ▽–, the minutes change in sequence.





Press RETURN.
The setting is completed, and the clock starts.

RETURN



To reset the time
Press RESET while in the CURRENT TIME screen, and repeat steps 4–7.

To display the time
Press DISPLAY.

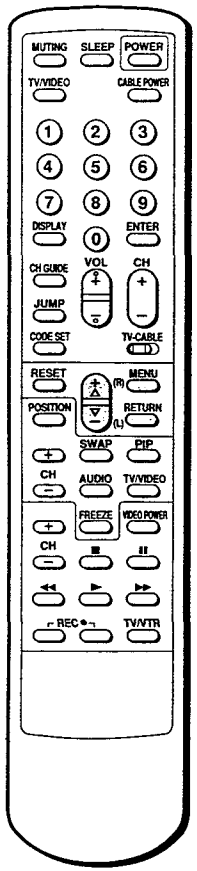
To return to the normal screen
Press MENU.

Notes

- The internal clock of this TV operates on a 12-hour cycle. If a 24-hour cycle number (for instance, 13:00) is entered, it will be cleared when you press RETURN.

12:00 AM stands for midnight.
12:00 PM stands for noon.

- All the settings including CURRENT TIME SET will be erased if you unplug the TV or a power failure occurs. Reset the current time by following steps 1–7.



RM-Y118

Setting the ON/OFF TIMER

With this function you can set your favorite program to appear on the screen at the time that you set.

EXAMPLE: Set the timer to turn on the TV every Monday through Friday at 3:15 PM for 2 hours, on channel 21.

1 Press MENU.
The main menu appears.

MENU

```
▸VIDEO
 AUDIO
 TIME
 SET UP
 CLOSED CAPTION
Use ≑ RETURN Exit MENU
```

2 Press △+ or ▽– to select TIME.
Then press RETURN.
The TIME menu appears.

(R) (L) RETURN

```
TIME
▸CURRENT TIME SET
 ON/OFF TIMER
 CHANNEL BLOCK
 >MENU

 MON  3:15 PM
Use ≑ RETURN Exit MENU
```

3 Press △+ or ▽– to select ON/OFF TIMER.
Then press RETURN.
The ON/OFF TIMER screen appears.

(R) (L) RETURN

```
ON/OFF TIMER

▸EVERY SUN-SAT
 12:00AM _h CH___
 >MENU

Use ≑ RETURN Exit MENU
```

Note

If the ON/OFF TIMER display appears in black, the current time has not been set and you cannot select ON/OFF TIMER. To set the clock, see "Setting the Clock—CURRENT TIME SET", pp. 44–45.

4 Press RETURN again.
"Set the day." appears on the screen.

RETURN

```
ON/OFF TIMER

  EVERY SUN-SAT
  12:00AM _h CH___
  >MENU

Set the day.
Use ≑ RETURN Exit MENU
```

5 Press △+ or ▽– to set the day.
Each time you press △+ or ▽– the days of the week change as shown in Fig. 1.
Then press RETURN.
"Set the time." appears on the screen.

(R) (L) RETURN

```
ON/OFF TIMER

  EVERY MON-FRY
  12:00AM _h CH___
  >MENU

Set the time.
Use ≑ RETURN Exit MENU
```

6 Press △+ or ▽– to set the hour that you want the TIMER to start.
Each time you press △+ or ▽–, the hour changes in sequence.
Then press RETURN.

(R) (L) RETURN

```
ON/OFF TIMER

  EVERY MON-FRY
   3:00PM _h CH___
  >MENU

Set the time.
Use ≑ RETURN Exit MENU
```

7 Press △+ or ▽– to set the minutes.
Each time you press △+ or ▽–, the minutes change in sequence.
Then press RETURN.
"Set the duration." appears on the screen.

(R) (L) RETURN

```
ON/OFF TIMER

  EVERY MON-FRY
   3:15PM _h CH___
  >MENU

Set the duration.
Use ≑ RETURN Exit MENU
```

8 Press △+ or ▽– to set the duration of time.
Each time you press △+ or ▽–, the duration changes from "1" to "6" in sequence.
Then press RETURN.
"Select the channel" appears on the screen.

(R) (L) RETURN

```
ON/OFF TIMER

  EVERY MON-FRY
   3:15PM 2h CH___
  >MENU

Select the channel
Use ≑ RETURN Exit MENU
```

9 Press △+ or ▽– to set the channel that you want the TV to tune in.
Each time you press △+ or ▽–, the channel number changes from 1 to 125 in sequence.

(R) (L)

```
ON/OFF TIMER

  EVERY MON-FRY
   3:15PM 2h CH 21
  >MENU

Select the channel
Use ≑ RETURN Exit MENU
```

Press RETURN.
The setting is completed, and the TIMER indicator on the front of the TV lights up.

RETURN

```
ON/OFF TIMER

▸EVERY MON-FRY
  3:15PM 2h CH 21
  >MENU

Use ≑ RETURN Exit MENU
```

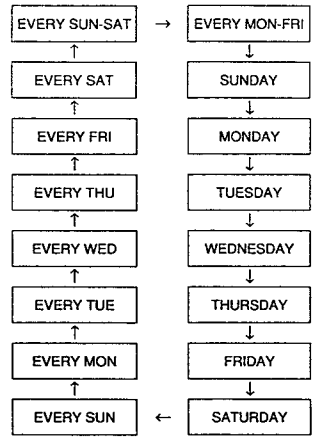
To clear the ON/OFF TIMER setting
Press RESET while in the ON/OFF TIMER screen.

To return to the normal screen
Press MENU.

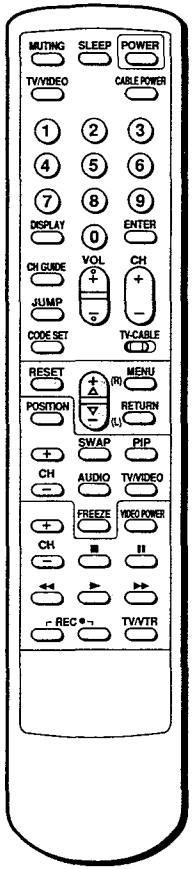
Notes

- While the TIMER is set, the TIMER indicator on the TV is on.
- One minute before the timer goes off, the "TV will turn off" display will appear on the screen.
- All the settings including ON/OFF TIMER will be erased if you unplug the TV or a power failure occurs. Reset the ON/OFF TIMER by following steps 1-9.
- If you have not set the clock correctly, the ON/OFF TIMER will not operate at the proper time. To set the clock, see "Setting the Clock–CURRENT TIME SET", pp. 44–45.

Fig. 1
Selecting the day(s) of the week
When you press △+, the days of the week appear in the following order.



(▽–: reverse order)



RM-Y118

Setting CHANNEL BLOCK

Use this function to block a channel from appearing on the screen during the time you specify. You can use this function to prevent children from watching undesirable programs.

EXAMPLE: Set CHANNEL BLOCK every Sunday at 8:45 PM for one hour, on channel 38.

1 Press MENU.
The main menu appears.

MENU

```
▸VIDEO
 AUDIO
 TIME
 SET UP
 CLOSED CAPTION
Use ≑ RETURN  Exit MENU
```

2 Press Δ+ or ∇– to select TIME.
Then press RETURN.
The TIME menu appears.

(R) (L) RETURN

```
TIME
▸CURRENT TIME SET
 ON/OFF TIMER
 CHANNEL BLOCK
 >MENU

 MON  3:15 PM
Use ≑ RETURN  Exit MENU
```

3 Press Δ+ or ∇– to select CHANNEL BLOCK.
Then press RETURN.
The CHANNEL BLOCK screen appears.

(R) (L) RETURN

```
CHANNEL BLOCK

▸EVERY SUN-SAT
 12:00AM _h CH___
 >MENU

Use ≑ RETURN  Exit MENU
```

Note

If the CHANNEL BLOCK display appears in black, the current time has not been set and you cannot select CHANNEL BLOCK. To set the clock, see "Setting the Clock—CURRENT TIME SET", pp. 44–45.

4 Press RETURN again.
"Set the day." appears on the screen.

RETURN

```
CHANNEL BLOCK

 EVERY SUN-SAT
 12:00AM _h CH___
 >MENU

Set the day.
Use ≑ RETURN  Exit MENU
```

5 Press Δ+ or ∇– to set the day.
Each time you press Δ+ or ∇–, the days of the week change as shown in Fig. 1.(See p. 47.)
Then press RETURN.
"Set the time." appears on the screen.

(R) (L) RETURN

```
CHANNEL BLOCK

 SUNDAY
 12:00AM _h CH___
 >MENU

Set the time.
Use ≑ RETURN  Exit MENU
```

6 Press Δ+ or ∇– to set the hour.
Each time you press Δ+ or ∇–, the hour changes in sequence.
Then press RETURN.

(R) (L) RETURN

```
CHANNEL BLOCK

 SUNDAY
  8:00PM _h CH___
 >MENU

Set the time.
Use ≑ RETURN  Exit MENU
```

7 Press Δ+ or ∇– to set the minutes.
Each time you press Δ+ or ∇–, the minutes change in sequence.
Then press RETURN.
"Set the duration." appears on the screen.

(R) (L) RETURN

```
CHANNEL BLOCK

 SUNDAY
  8:45PM _h CH___
 >MENU

Set the duration.
Use ≑ RETURN  Exit MENU
```

8 Press Δ+ or ∇– to set the duration of time that you want the TV remain blocked.
Each time you press Δ+ or ∇–, the duration changes from 1 to 6 in sequence.
Then press RETURN.
"Select the channel" appears on the screen.

(R) (L) RETURN

```
CHANNEL BLOCK

 SUNDAY
  8:45PM 1h CH___
 >MENU

Select the channel
Use ≑ RETURN  Exit MENU
```

9 Press Δ+ or ∇– to set the channel that you want to block.
Each time you press Δ+ or ∇–, the channel number changes from 1 to 125 in sequence.

(R) (L)

Press RETURN.
The setting is completed.

RETURN

```
CHANNEL BLOCK

 SUNDAY
  8:45PM 1h CH 38
 >MENU

Select the channel
Use ≑ RETURN  Exit MENU
```

```
CHANNEL BLOCK

▸SUNDAY
  8:45PM 1h CH 38
 >MENU

Use ≑ RETURN  Exit MENU
```

If you select a channel which has been blocked, the message of "BLOCKED" appears.

```
BLOCKED
```

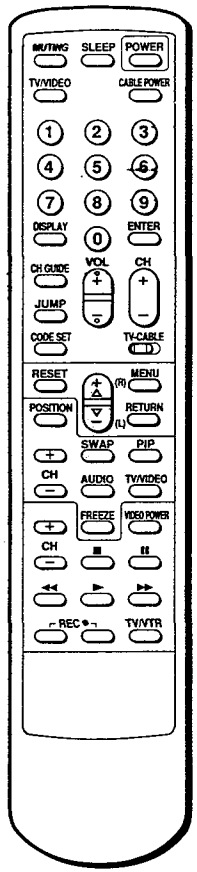
To clear the BLOCK setting
Press RESET while in the CHANNEL BLOCK screen.

To return to the normal screen
Press MENU.

Notes

- If you set a new CHANNEL BLOCK by following steps 1-9, the original setting will be erased.
- If you have not set the clock correctly, CHANNEL BLOCK will not operate at the proper time. To set the clock, see "Setting the Clock—CURRENT TIME SET", pp. 44–45.

1-12. CUSTOMIZING THE SCREEN DISPLAY



RM-Y118

Setting Channel Captions — CH CAPTION

Use this feature to caption up to 12 channel number displays with the matching channel call letters.

EXAMPLE: Caption channel 20 with ESPN at the caption position number 4.

1 Press MENU.
The main menu appears.

MENU

```
▸VIDEO
 AUDIO
 TIME
 SET UP
 CLOSED CAPTION
Use ◆ RETURN Exit MENU
```

2 Press △+ or ▽– to select SET UP
Then press RETURN.
The SET UP menu appears.

(R) (L) RETURN

```
SET UP
▸CABLE: ON
 AUTO PROGRAM
 CH ERASE/ADD
 CH CAPTION/GUIDE
 S VIDEO
 VIDEO LABEL
 >MENU
```

3 Press △+ or ▽– to select CH CAPTION/GUIDE.
Then press RETURN.
The CH CAPTION/GUIDE screen appears.

(R) (L) RETURN

```
CH CAPTION/GUIDE
① ② ③  ▸ ---
④ ⑤ ⑥    ----
⑦ ⑧ ⑨    ⊃
DISP ⓪ ENT
Use ◆ RETURN Exit MENU
```

Note

If the CH CAPTION display appears in black, the TV is in video mode and you cannot select CH CAPTION/GUIDE. Press TV/VIDEO to change to TV mode.

4 Press RETURN again.
"Select a position." appears on the screen.

RETURN

```
CH CAPTION/GUIDE
① ② ③    ---
④ ⑤ ⑥    ----
⑦ ⑧ ⑨    ⊃
DISP ⓪ ENT
Select a position.
Use ◆ RETURN Exit MENU
```

5 Press △+ or ▽– to select a caption position number.
Each time you press △+ or ▽–, the caption position number is marked in sequence.
Then press RETURN.
"Select the channel" appears on the screen.

(R) (L) RETURN

```
CH CAPTION/GUIDE
① ② ③    ---
④ ⑤ ⑥    ----
⑦ ⑧ ⑨    ⊃
DISP ⓪ ENT
Select the channel
Use ◆ RETURN Exit MENU
```

6 Press △+ or ▽– to select the channel you want to caption.
Each time you press △+ or ▽–, the channel number changes from 1 to 125.
Then press RETURN.
"Select the letter." appears on the screen.

(R) (L) RETURN

```
CH CAPTION/GUIDE
① ② ③      20
④ ⑤ ⑥    ----
⑦ ⑧ ⑨    ⊃
DISP ⓪ ENT
Select the letter.
Use ◆ RETURN Exit MENU
```

7 Press △+ or ▽– to select the first letter.
Each time you press △+ or ▽–, "0-9", "A-Z", "&", "/", "–" and "_(blank space)" appear in sequence.
Then press RETURN.

(R) (L) RETURN

```
CH CAPTION/GUIDE
① ② ③      20
④ ⑤ ⑥    E---
⑦ ⑧ ⑨    ⊃
DISP ⓪ ENT
Select the letter.
Use ◆ RETURN Exit MENU
```

8 Repeat step 7 to select each remaining letter.
(For a 3-letter caption, leave a space by pressing RETURN only.)

(R) (L) RETURN

```
CH CAPTION/GUIDE
① ② ③      20
④ ⑤ ⑥    ESPN
⑦ ⑧ ⑨    ⊃
DISP ⓪ ENT
Select the letter.
Use ◆ RETURN Exit MENU
```

9 Press RETURN.
The setting is completed.

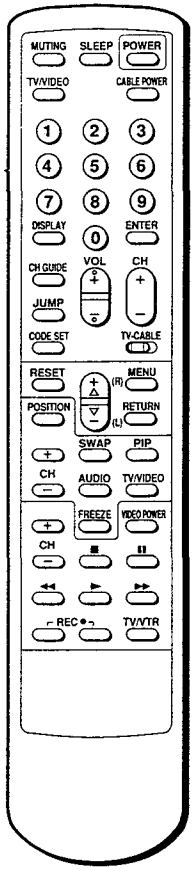
RETURN

```
CH CAPTION/GUIDE
① ② ③  ▸ ---
④ ⑤ ⑥    ----
⑦ ⑧ ⑨    ⊃
DISP ⓪ ENT
Use ◆ RETURN Exit MENU
```

To caption other channels
Repeat steps 4-9.

To erase unneeded captions
Call the caption setting screen by following steps 1–5, and press RESET.

To return to the normal screen
Press MENU.



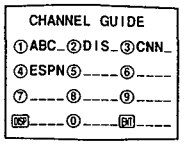
RM-Y118

Viewing the Captioned Channels — CH GUIDE

Use this feature to display the captions you set, and to select a channel directory for viewing.

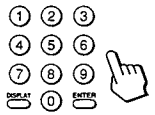
1 Press CH GUIDE.
A directory appears, corresponding to the directory keys on the Remote Commander.

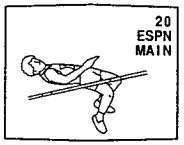
CH GUIDE

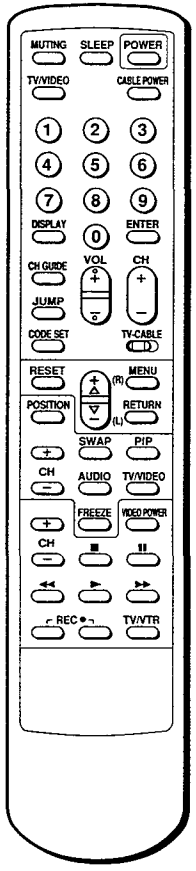


To cancel the CHANNEL GUIDE screen
Press CH GUIDE again.

2 Press the directory key of the channel you want to watch.







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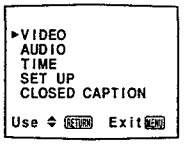
Setting VIDEO LABEL (except for KV-27TS29/2970RS)

Use this feature to label each input mode in order to identify the equipment connected to each input terminal.

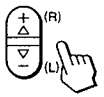
EXAMPLE. Label VIDEO 1 IN as VHS.

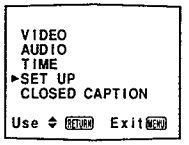
1 Press MENU.
The main menu appears.

MENU



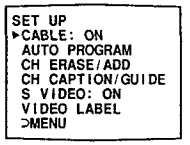
2 Press △+ or ▽– to select SET UP



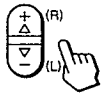


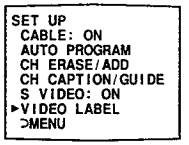
Press RETURN.
The SET UP menu appears.

RETURN



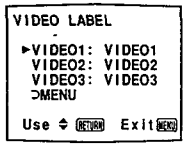
3 Press △+ or ▽– to select VIDEO LABEL.

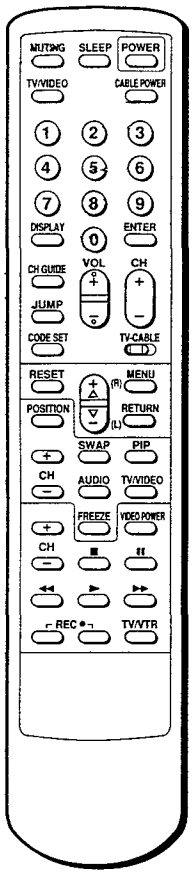




Press RETURN.
The VIDEO LABEL screen appears.

RETURN





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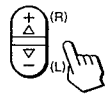
To return to the normal screen
Press MENU.

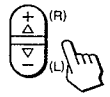
4 Press Δ+ or ∇– to select the input mode you want to label.




```
VIDEO LABEL
▸VIDEO1: VIDEO1
 VIDEO2: VIDEO2
 VIDEO3: VIDEO3
 >MENU
Use ≑ RETURN Exit MENU
```

Press RETURN.

5 Press Δ+ or ∇– to select VHS.




```
VIDEO LABEL
 VIDEO1: VIDEO1
 VIDEO2: VIDEO2
 VIDEO3: VIDEO3
 >MENU
Use ≑ RETURN Exit MENU
```

Each time you press Δ+, the label changes:

VIDEO 1
VIDEO 1 → S VIDEO → BETA → 8 mm → VHS → LD

VIDEO 2
VIDEO 2 → BETA → 8 mm → VHS → LD

VIDEO 3
VIDEO 3 → BETA → 8 mm → VHS → LD

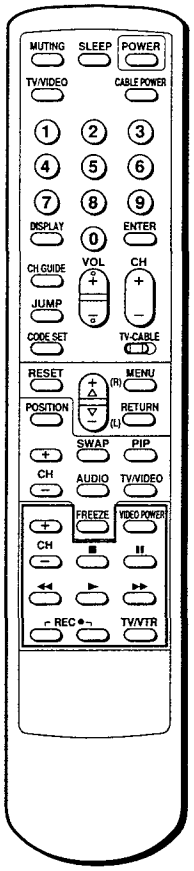
(∇–: reverse order)

Press RETURN.

```
VIDEO LABEL
▸VIDEO1: VHS
 VIDEO2: VIDEO2
 VIDEO3: VIDEO3
 >MENU
Use ≑ RETURN Exit MENU
```

To label other input modes
Repeat steps 4–5.

1-13. USING THE PRE-PROGRAMMED REMOTE COMMANDER



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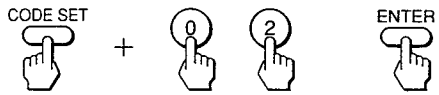
You can operate your video equipment and cable converter box that has an infrared remote detector with this supplied pre-programmed Remote Commander.

Operating Sony or non-Sony Video Equipment—Pre-Programmed Function

With the supplied Remote Commander, you can operate a Sony video cassette recorder (Beta, 8 mm, VHS) or a multi disc player as well as most non-Sony video equipment connected to your TV by following the steps below.

1 While pressing CODE SET, press 0 - 9 to enter the manufacturer's code number (see chart on p. 56). For example, to operate a Sony 8 mm VCR, press 0, 2 and ENTER.



2 Use the video operating buttons on the Remote Commander to operate the video equipment.

Operating a VCR

To turn on or off	Press VIDEO POWER.
To change channels (when watching TV programs through the VCR's tuner)	Press CH +/–
To record	Press ● (2 buttons simultaneously).
To play	Press ▶
To stop	Press ■.
To fast forward	Press ▶▶
To rewind the tape	Press ◀◀.
To pause	Press II.
To search the picture forward and backward	Press ▶▶ or ◀◀ during playback.

Operating a Video Disc Player

To play	Press ▶
To stop	Press ■.
To pause	Press II. *To resume normal playback, press again.* *This function is effective only for CAV (standard-play disc). With CLV (extended-play disc), the TV will go into the standby mode if II is pressed.
To search the picture forward and backward	Keep pressing ▶▶ or ◀◀ during playback. *To resume normal playback, release the button.*

Manufactures and Code Numbers (VCR/video disc player)

Manufacturer	Code number
SONY	01, 02, 03, 04
CANON	05
EMERSON	22, 30, 33
FISHER	10, 11, 12, 15
FUNAI	29
GENERAL ELECTRIC	05, 08
GOLDSTAR	25
HITACHI	07, 08
JVC	16
MAGNAVOX	05, 06, 09
MITSUBISHI	18, 19, 26, 27
MULTITECH	29
NEC	16, 23, 31
PANASONIC	05, 06
PHILCO	05, 06
PHILIPS	05, 06, 09
QUASAR	05, 06
RCA	07, 08
SAMSUNG	24, 32
SANYO	11, 15
SCOTT	21
SHARP	13, 14
SHINTOM	34
SYLVANIA	05, 06, 09
SYMPHONIC	29
TEKNIKA	28, 29
TOSHIBA	20, 21
TOTE VISION	25
ZENITH	17

The code numbers for Sony equipment are assigned as follows:

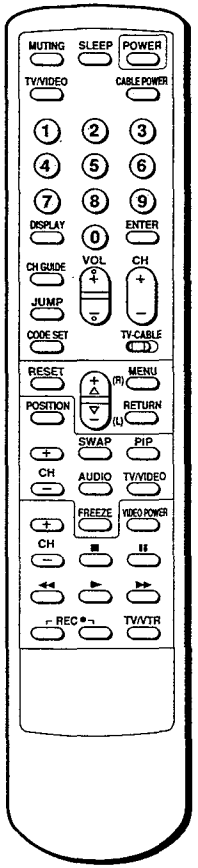
01 ..... Beta, ED Beta VCR
02 ..... 8 mm VCR
03 ..... VHS VCR
04 ..... Video disc player

Notes

- If more than one code number is listed for manufacturers other than Sony, try entering them one by one, until you come to the correct code for your equipment.
- If the video equipment does not have a certain function, the corresponding button on this Remote Commander will not operate.
- In some rare cases, you may not be able to operate your non-Sony video equipment with the supplied Remote Commander. This is because your equipment may use a code that is not provided with this Remote Commander. In this case, please use the equipment's own remote control unit.

CAUTION

When you remove the batteries from the Remote Commander, all the settings will revert to the Sony Beta setting. Reset the codes by following the steps on p. 55.



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Manufactures and Code Numbers (cable box)

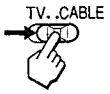
MANUFACTURER	CODE
JERROLD	60, 61, 62, 63, 64, 65
PIONEER	69, 70
SCIENTIFIC ATLANTA	66, 67
TOCOM	71, 72
ZENITH	68

Operating a Cable Converter Box

Follow these instructions to set the manufacturer's code which will enable you to operate a connected cable converter box with the pre-programmed Remote Commander.

EXAMPLE: Operate a connected Zenith cable converter box.

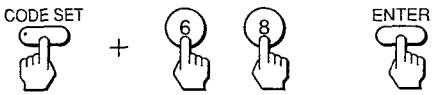
1 Set the TV/CABLE selector to CABLE.



Notes

- If more than one code number is listed, try entering them one by one until you come to the correct code for your equipment.
- If you enter a new code number, the code number you previously entered at that setting is erased.
- In some rare cases, your equipment may use a code that is not provided with this Remote Commander and you may not be able to operate your cable converter box with the supplied Remote Commander. In this case, use the equipment's own remote control unit.

2 While pressing CODE SET, press 6 and 8 (Zenith's code number -see chart below) and ENTER.

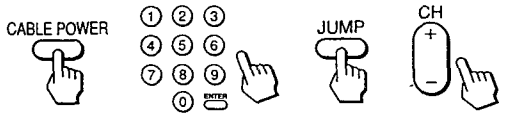


A long beep sounds, indicating that the code has been set.

Note

If you press a wrong code or if the code has not been set, four short beeps sound. Repeat step 2 to set the code.

3 Use CABLE POWER and the TV control buttons (0 – 9, ENTER, JUMP and CH +/–) to operate the cable converter box.

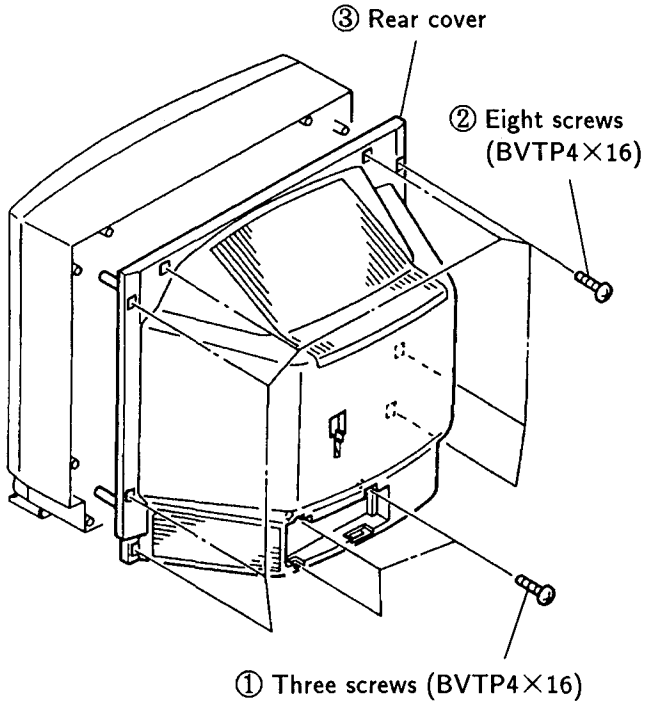


To operate the TV
Set the TV/CABLE selector to TV, then use the TV control buttons to control the TV.

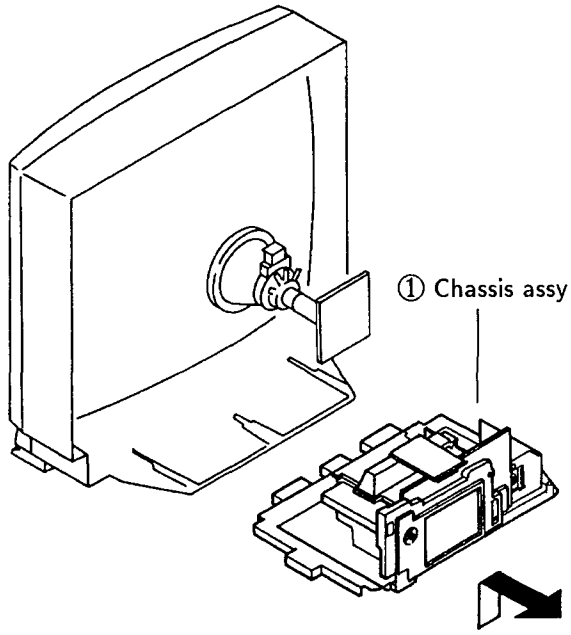
For more details on operating the cable box
Refer to the operating instructions that come with the cable box.

SECTION 2
DISASSEMBLY

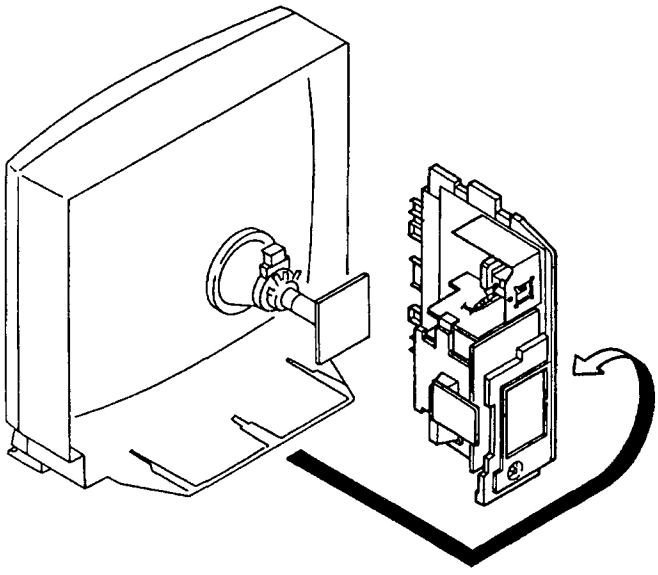
2-1. REAR COVER REMOVAL



2-2. CHASSIS ASSY REMOVAL

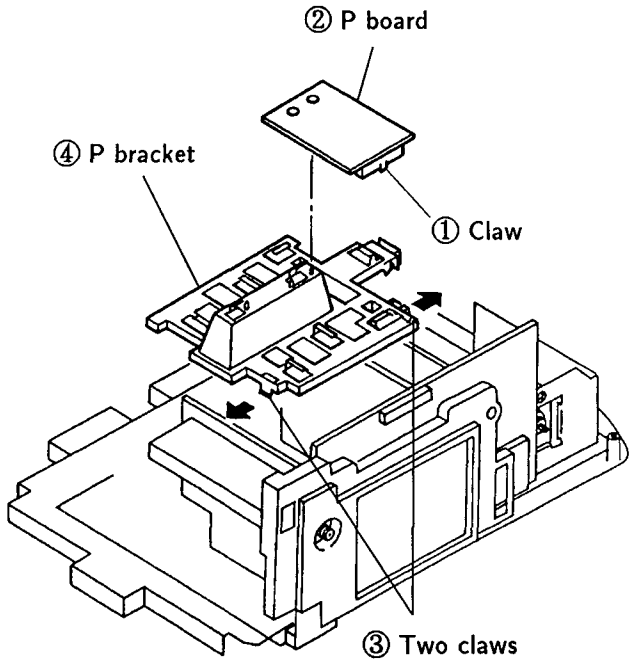


2-3. SERVICE POSITION

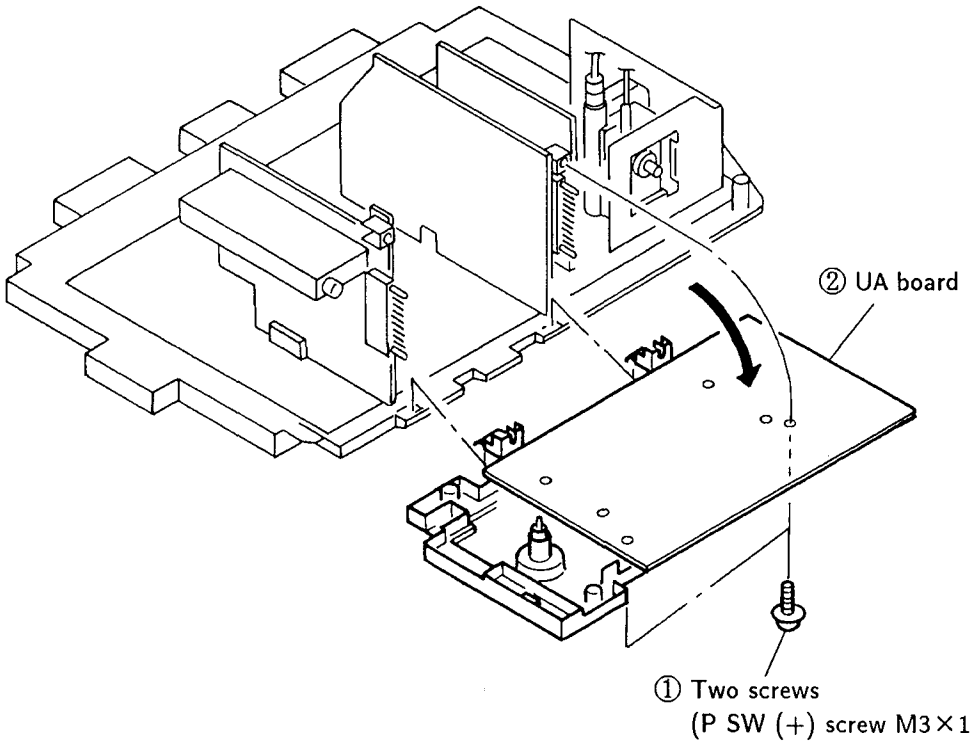


2-4. P BOARD AND P BRACKET REMOVAL

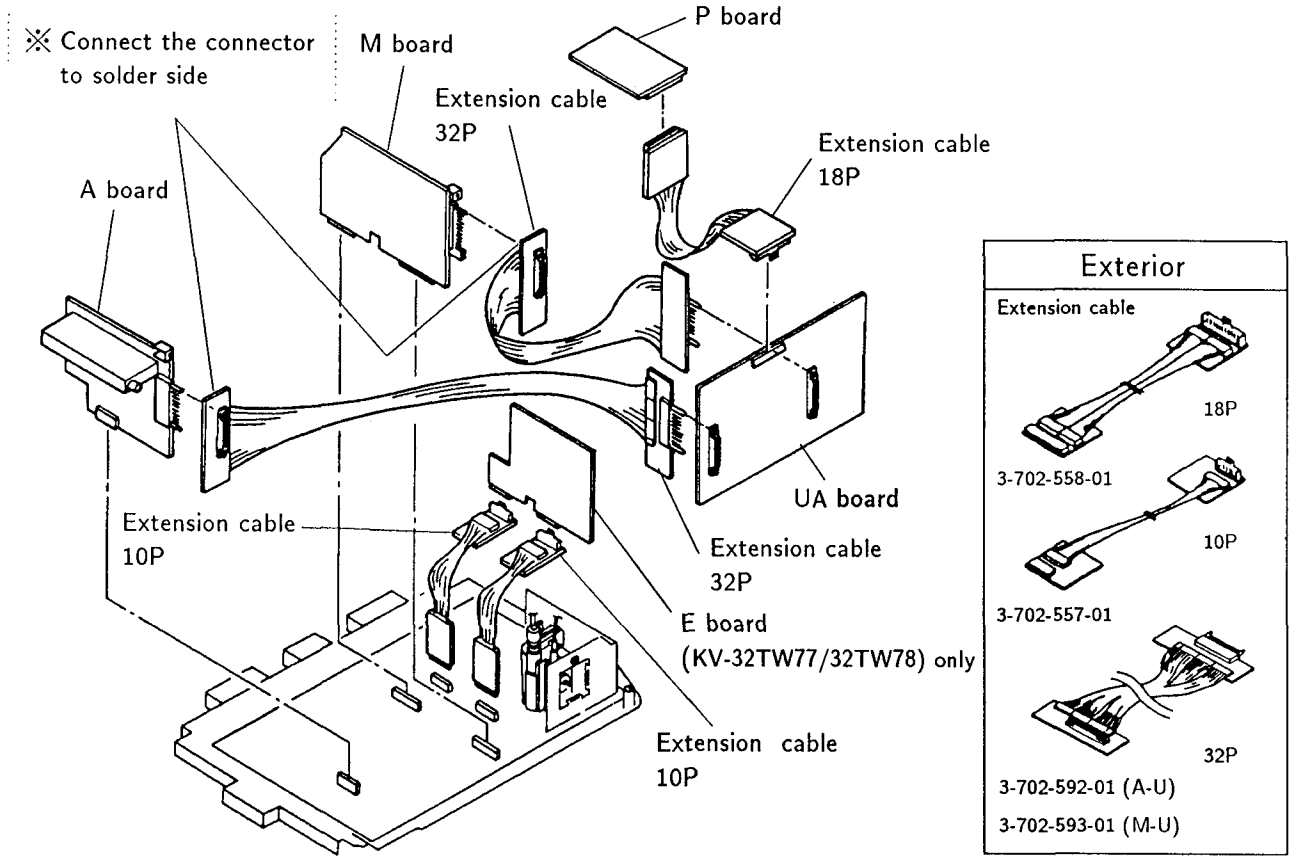
(KV-32TS46 (UC/CND)/32TS36 (US/CND)
/27TS36 (US/CND) only)



2-5. UA BOARD REMOVAL

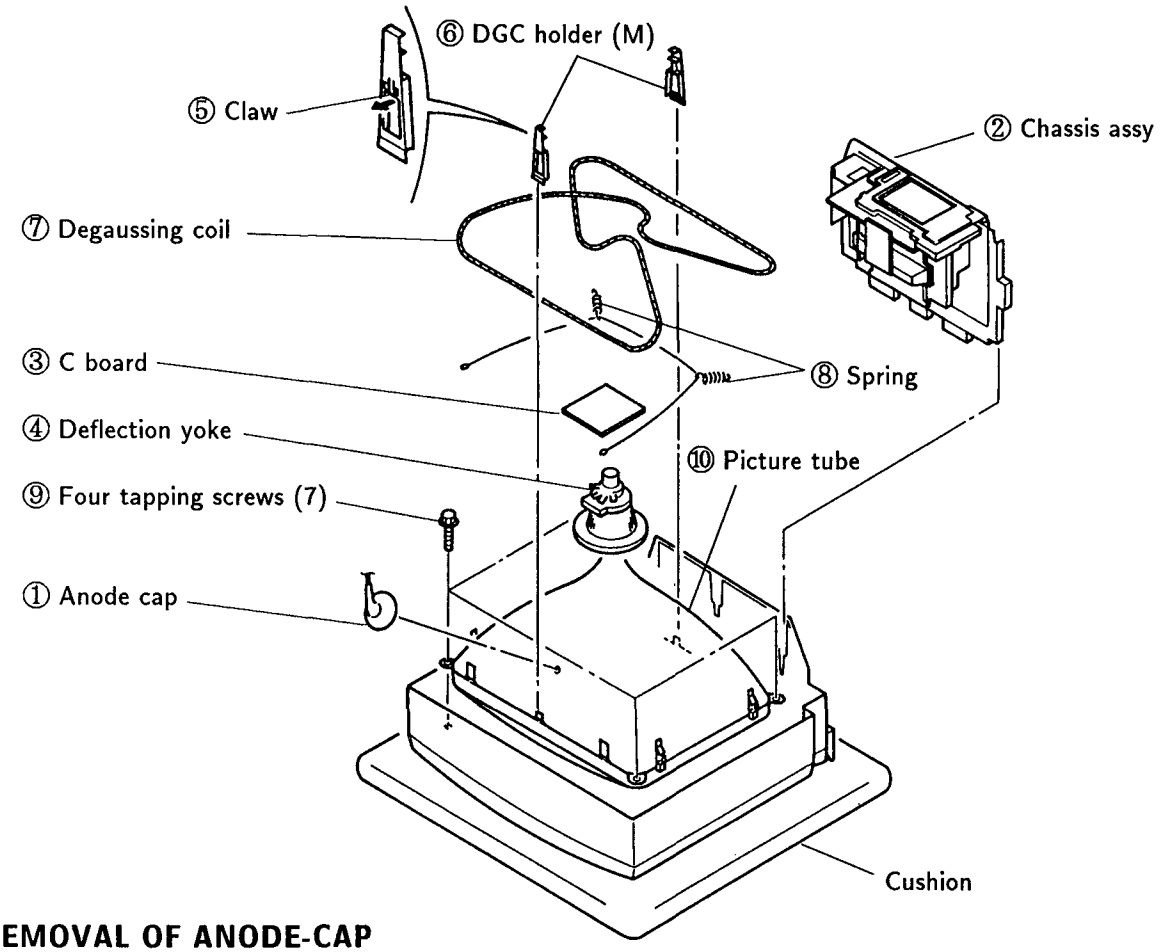


2-6. EXTENSION CABLE



2-7. PICTURE TUBE REMOVAL (1)

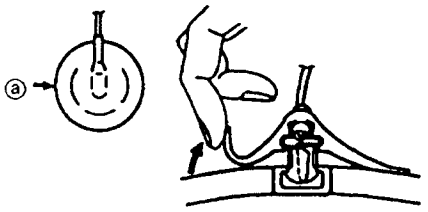
(KV-27TS36 (US/CND)/27TS32/27TS29 (US/CND) only)



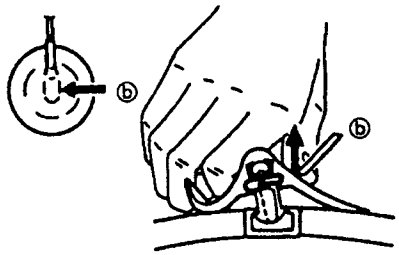
· REMOVAL OF ANODE-CAP

NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT chield or carbon painted on the CRT, after removing the anode.

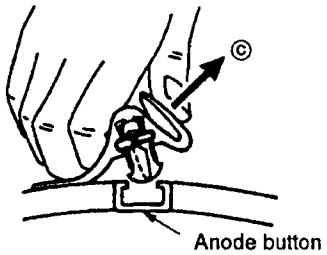
· REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.



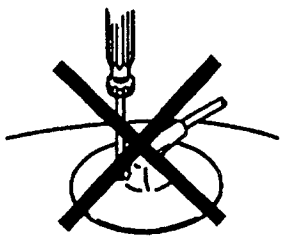
③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.

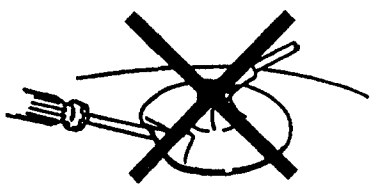
· HOW TO HANDLE AN ANODE-CAP

① Don't hurt the surface of anode-caps with sharp shaped material!

② Don't press the rubber hardly not to hurt inside of anode-caps!
A material fitting called as shatter-hook terminal is built in the rubber.

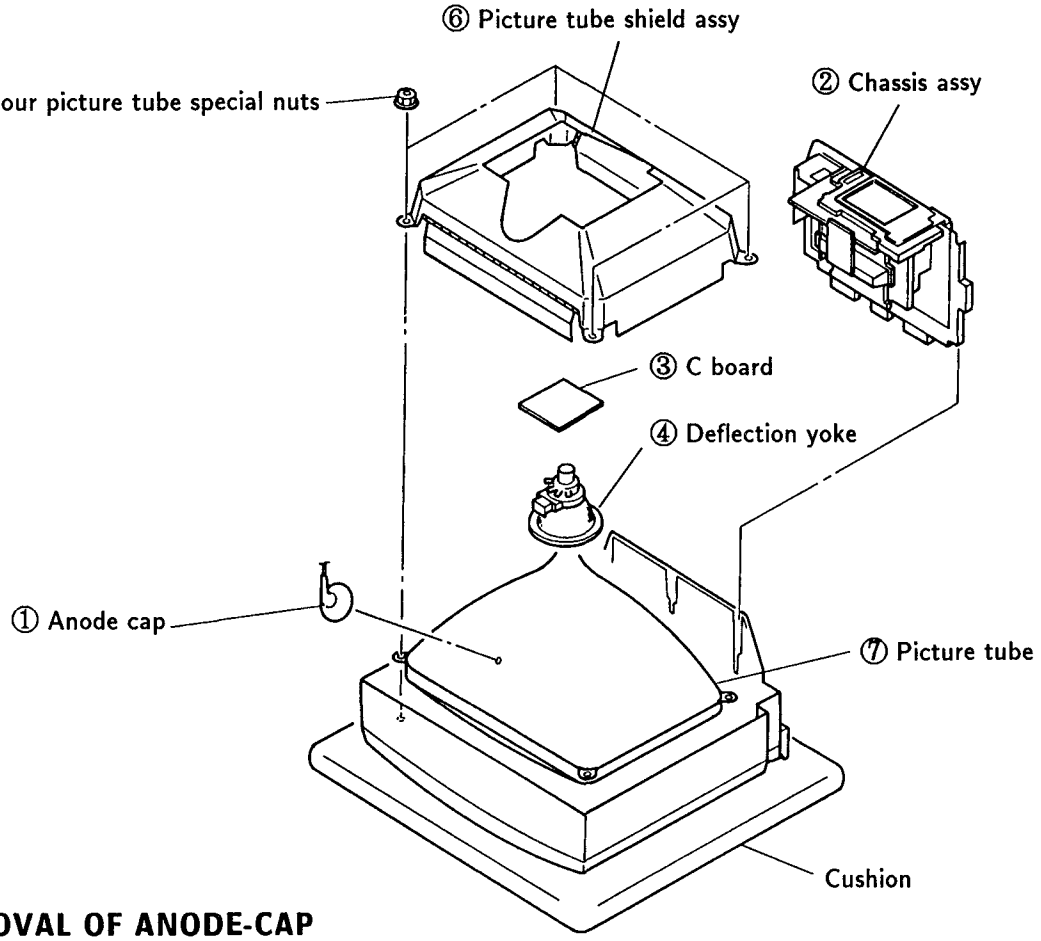
③ Don't turn the foot of rubber over hardly!
The shatter-hook terminal will stick out or hurt the rubber.





2-7. PICTURE TUBE REMOVAL (2)

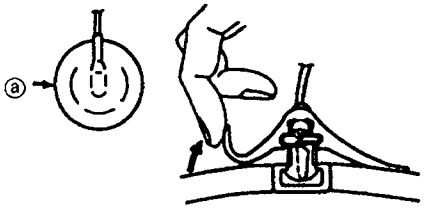
(KV-32TS46 (US/CND)/32TS36 (US/CND) only)



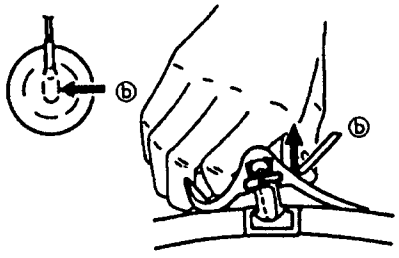
• REMOVAL OF ANODE-CAP

NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT chield or carbon painted on the CRT, after removing the anode.

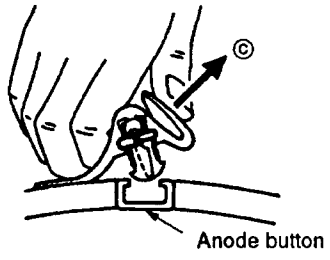
• REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.



③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.

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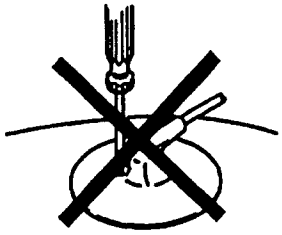
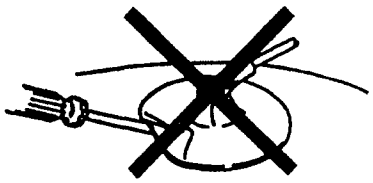
The shatter-hook terminal will stick out or hurt the rubber.





2-8. REPAIR OF CHIP COMPONENT CIRCUIT BOARD

2-8-1. POINTS OF COMPONENT REMOVAL

Handing of blower type soldering iron

If hot blast is too strong or applied from a slanting direction, small components and solder near the component being removed can be blown off. Do not use blower type without temperature control.

2-8-2. NOTES ON SOLDERING FOR CHIP COMPONENTS

1) During soldering a chip component, if a soldering iron is applied for a long time, the heat may damage the component or cause pattern peeling.
2) Do not reuse a removed component. The characteristics of such a component may deteriorate.
3) Use wire solder containing silver (ϕ 0.3 or ϕ 0.6). (The pin electrodes of the laminated chip capacitor are silver +palladium, so if wire solder which does not contain silver is used, the silver of the pin electrode will be sucked into the solder.)

2-8-3. REMOVAL AND MOUNTING OF COMPONENTS

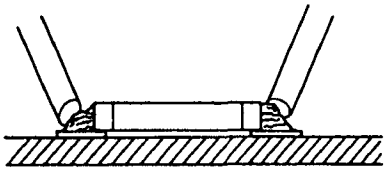
Chip resistor and chip capacitor

REMOVAL

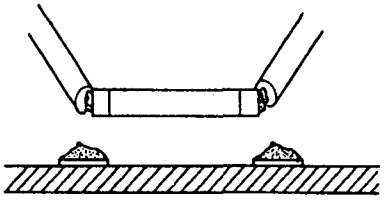
• Using two soldering irons

1) Mounted state

2)Melt the solder.

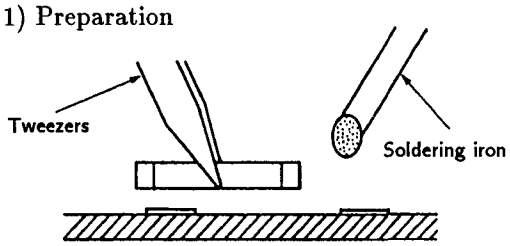


3)Remove the component.

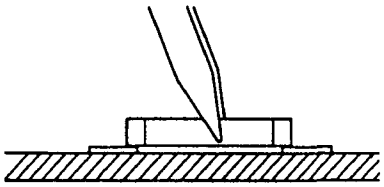


SOLDERING

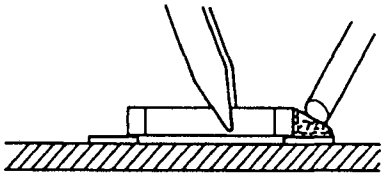
1) Preparation



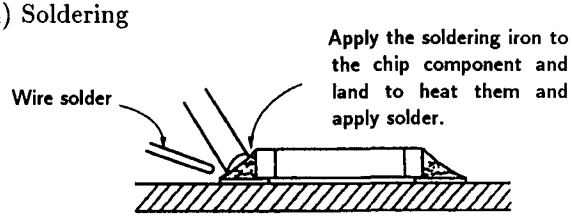
2) Location



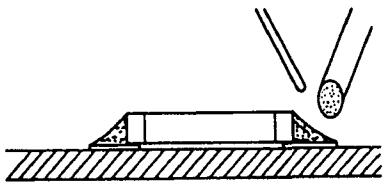
3) Tack soldering and flux application



4) Soldering



5) Soldering (Fix the fillet.)



6) Visual inspection

Check for the following defects :

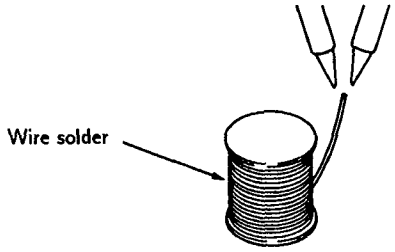
- No-soldered part
- Bridge (to other components or lands)
- Mispositioning
- Other defects

2-8-4. MINI-TRANSISTOR

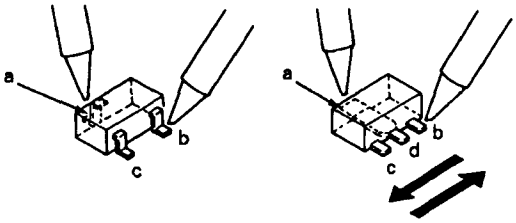
REMOVAL

- Using two soldering irons

1) Put a little solder on the tip of two soldering irons.

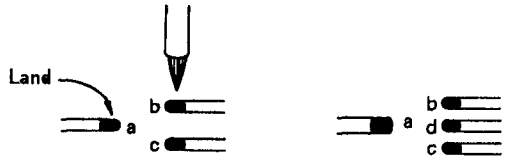


2) Apply the tip of one soldering iron to the point "a" and the other to the points "b" → "c" (or "b" → "d" → "c") and move the component in the directions indicated by arrows in the figure to remove it.

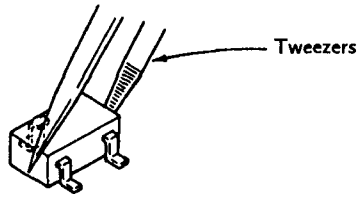


MOUNTING

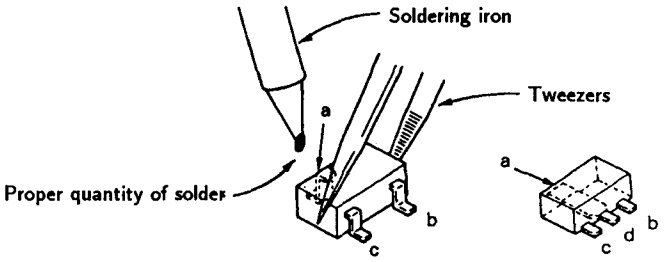
1) Apply a little flux to the land with a brush.



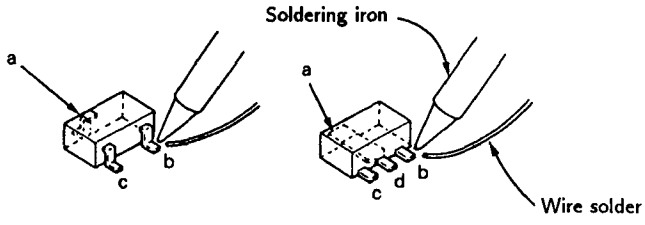
2) Place the component in position using tweezers.



3) Put a little solder on the tip of the soldering iron and solder the point "a" to fix the component.

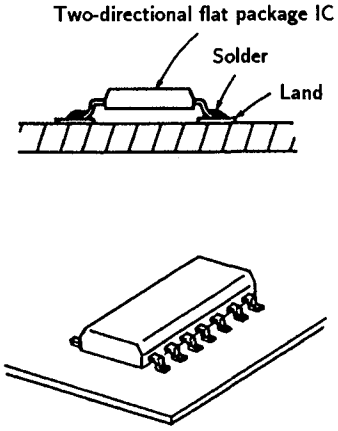


4) Bring the tip of the soldering iron and the wire solder close to the point to be soldered. Solder the points "b" → "c" (or "b" → "d" → "c") in order.



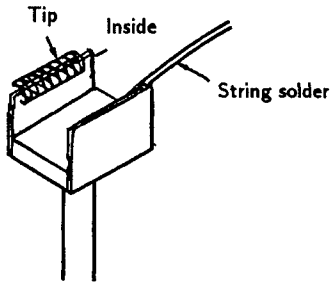
2-8-5. TWO-DIRECTIONAL FLAT PACKAGE IC

MOUNT CONDITION

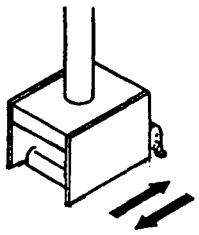


REMOVAL

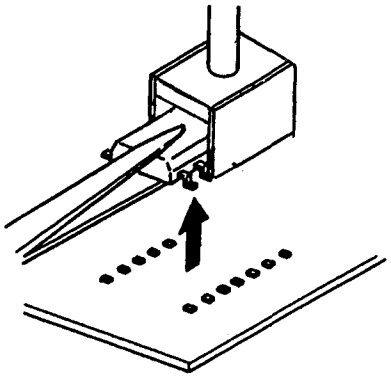
1) Apply some solder on the inside and the tip of the iron tip jig.



2) Place the iron tip jig over the IC, and move the jig to and fro as shown in the figure.

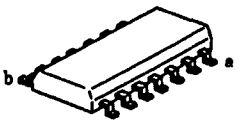


3) When the solder melts, lift the IC with a pair of tweezers and remove.

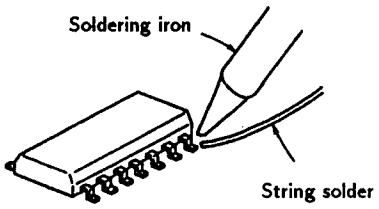


INSTALLATION

1) Place the two-directional flat package IC at the appointed position, solder pins a and b on the diagonal, and fasten it.

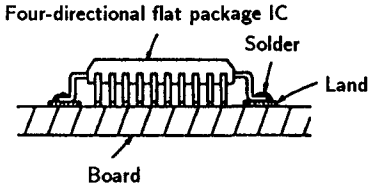


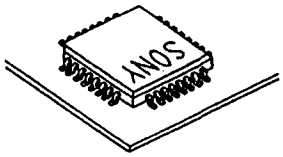
2) Solder the remaining pins with the soldering iron.



2-8-6. FOUR-DIRECTIONAL FLAT PACKAGE IC

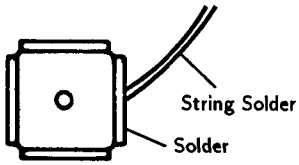
MOUNT CONDITION



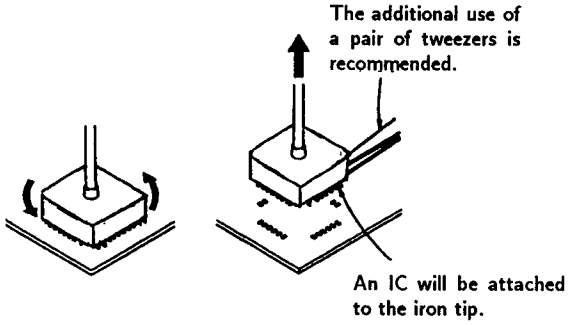


REMOVAL

1) Apply solder on the tip of the iron tip jig.



2) Place the iron tip jig over the IC, wait about two to three seconds, rotate the iron slightly and lift it up.

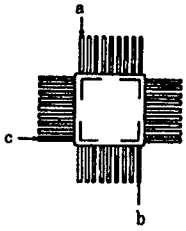


Note : For flat ICs of above 52P, the IC may not be completely attracted when the iron tip jig is lifted up. In these cases, use a pair of tweezers to remove.

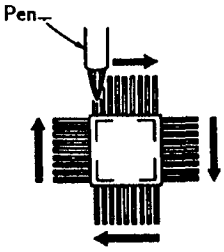
INSTALLATION

1) Place the four-directional flat package IC at the appointed position.

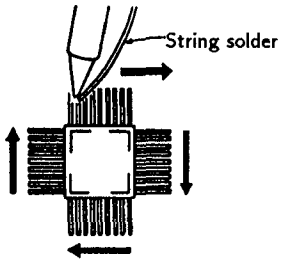
2) Apply a slight amount of solder on the iron tip, and solder the three sections in the order of a → b → c, and fix.



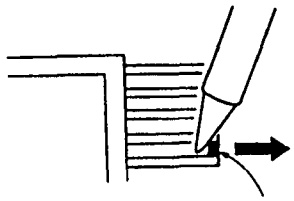
3) Apply a slight amount of flux with a pen on all four directions.



4) Apply solder on the iron tip and the string solder, and slide and solder in the directions of the arrows.



Note: 1) After soldering, if there are bridged sections, correct by sliding the soldering iron in the direction of the arrow.



Bridged section

If the bridges cannot be corrected using the above method, apply some flux with a pen and try again.

2) Soldering can be carried out more easily by sliding the iron tip near the tip of the IC leg. (Fig. A)

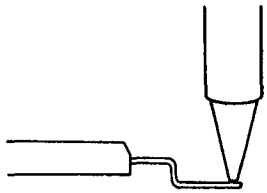


Fig. A

Be careful not to slide the bent sections of the leg as shown in Fig. B as soldering bridges will be formed.

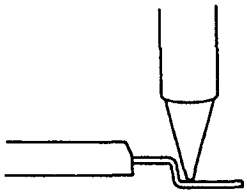
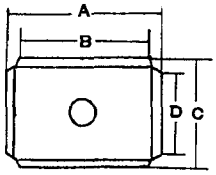
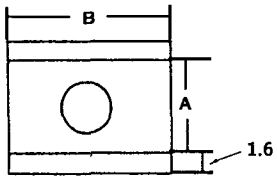
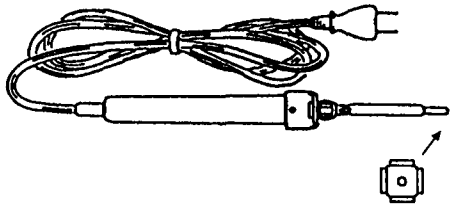
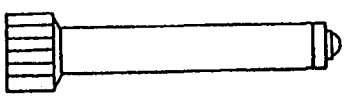


Fig. B

Exterior	Description	Part No.	Measure (mm)			
			A	B	C	D
	jig for removing 4-sided flat package IC	3-702-554-01	12.5	9.5	12.5	9.5
		〃 11	15.5	12.5	15.5	12.5
		〃 21	16.3	13.3	16.3	13.3
		〃 31	17.0	14.0	17.0	14.0
		〃 41	23.0	20.0	17.0	14.0
		〃 51	20.0	17.0	20.0	17 0
	jig for removing 2-sided flat package IC	3-702-555-01	6.0	5.0		
		〃 11	6.0	10.0		
		〃 21	7.0	12.5		
		〃 31	9.0	15.2		
		〃 41	9.0	18.0		
	soldering iron	3-702-552-01	55W 60g length 210mm			
	soldering holder	3-702-553-01				

SECTION 3
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switch should be set as follows unless otherwise noted :

PICTURE control . . . . . RESET
BRIGHTNESS control . . . . . center

Preparations :

- In order to reduce the influence of geomagnetism on the set's picture tube face it east or west.
- Switch on the set's power and degauss with the degausser.

3-1. BEAM LANDING

1. Input the white signal with the pattern generator.
   Contrast
   Bightness } normal
2. Set the pattern generator raster signal to green.
3. Move the deflection yoke to the rear and adjust with the purity control so that the green is at the center and the blue and the red take up equally sized areas on each side.
   (See Figures 3-1 through 3-3.)
4. Move the deflection yoke forward and adjust so that entire screen is green. (See Figure 3-1.)
5. Switch the raster signal to blue, then to red and verify the condition.
6. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
7. If the beam does not land correctly in all the corners, use a magnet to adjust it.
   (See Figure 3-4.)

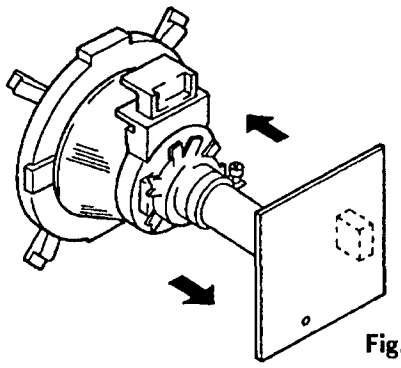


Fig.3-1

Perform the adjustments in order as follows :

1. Beam Landing
2. Convergence
3. Focus
4. White Balance

Note : Test Equipment Required.

1. Color-bar/Pattern Generator
2. Degausser
3. Oscilloscope

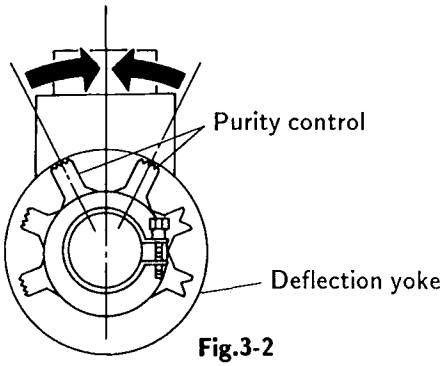


Fig.3-2

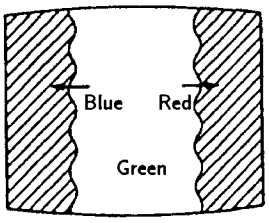


Fig.3-3

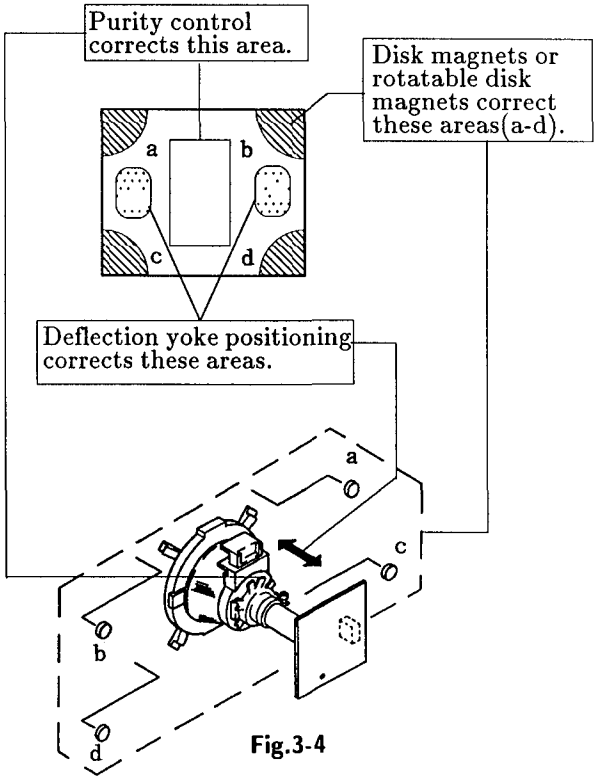


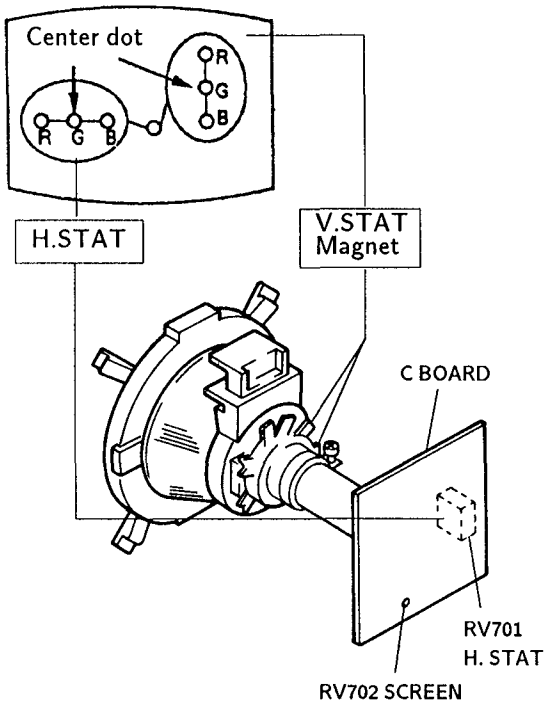
Fig.3-4

3-2. CONVERGENCE

Preparation :

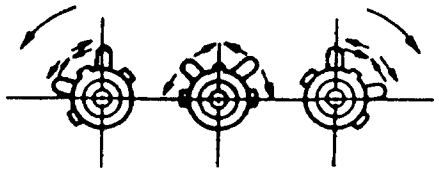
- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.

(1) **Horizontal and Vertical Static Convergence**

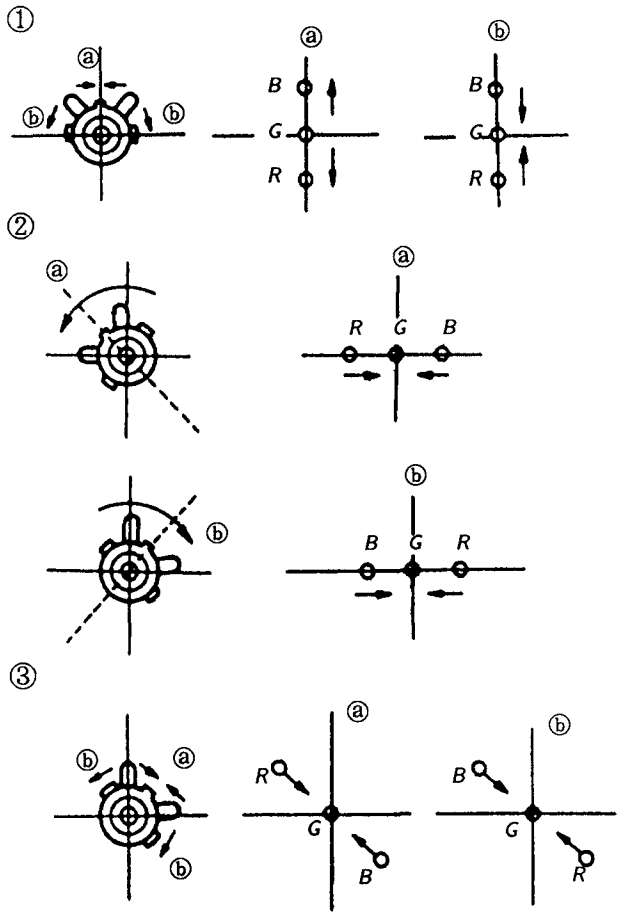


1. (Moving horizontally), adjust the H.STAT control so that the red, green, and blue points are on top of each other at the center of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
3. If the H.STAT variable resistor cannot bring the red, green, and blue points together at the center of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V. STAT magnet in the manner given below.
   (In this case, the H.STAT variable resistor and the V.STAT magnet influence each other)

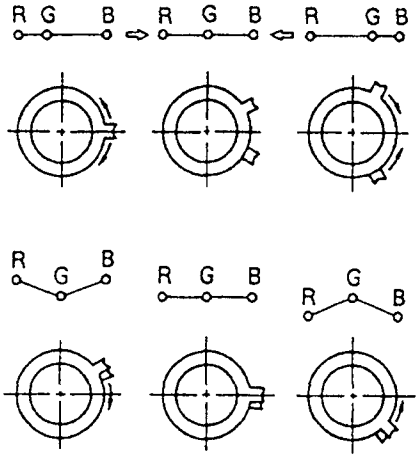
- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.



4. If the V.STAT magnet is moved in the direction of the ⓐ and ⓑ arrows, the red, green, and blue points move as shown below.



- Operation of BMC (Hexapole) Magnet



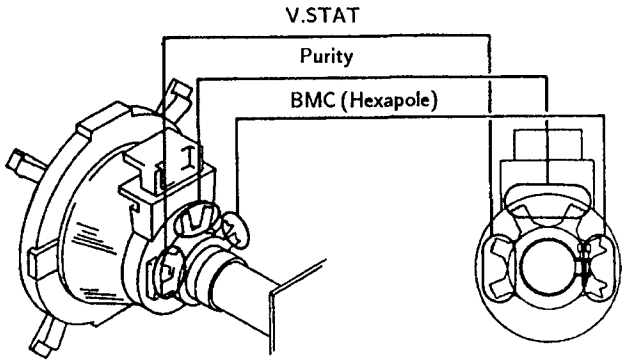
- The respective dot positions resulting from moving each magnet interact, so be sure to perform adjustment while tracking.
  Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the center of screen (by moving the dots in the horizontal direction).

(2) **Dynamic Convergence Adjustment**

Preparations :

- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.

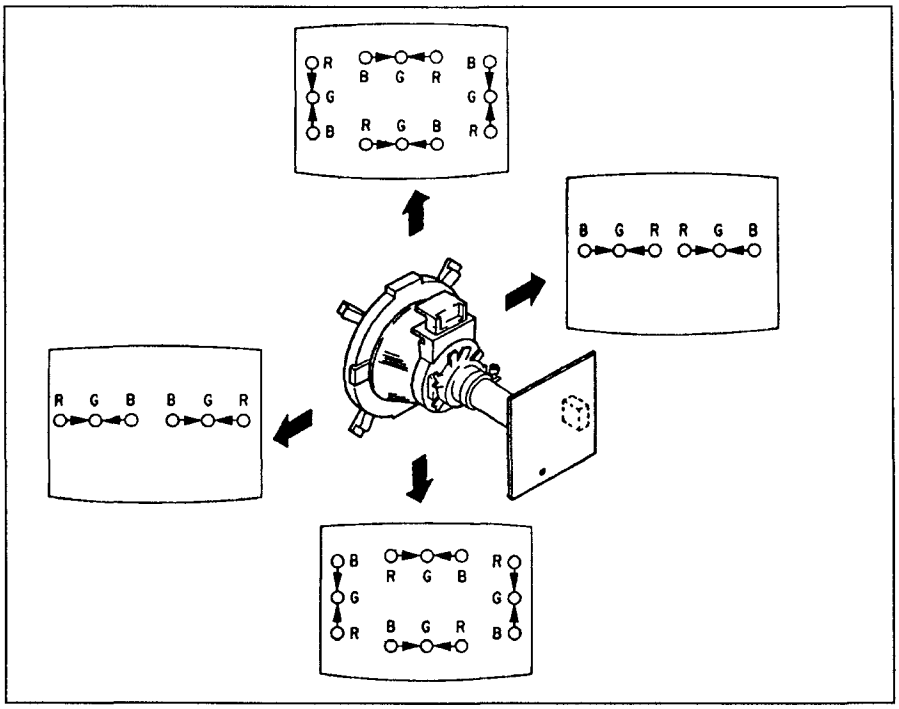
1. Slightly loosen the deflection yoke screws.
2. Remove the deflection yoke spacer.



• Y separation axis correction magnet adjustment

1. Receive the cross-hatch signal, and adjust [PIX] to "MIN" and [BRT] to "standard".
2. Adjust the deflection yoke to the upright condition when it hits the CRT.
3. Adjust so that the Y separation axis correction magnet on the neck assembly is symmetrical at the top and bottom (open state).
4. Return the deflection yoke to its original position.

3. Move the deflection yoke as shown in the figure below and optimize the convergence.
4. Tighten the deflection yoke screws.
5. Install the defelection yoke spacer.

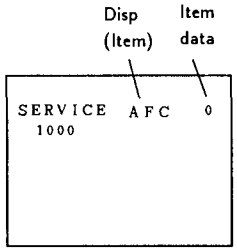


(3) Dynamic Convergence Circuit Adjustment
(32 inch only)

SERVICE MODE PROCEDURE

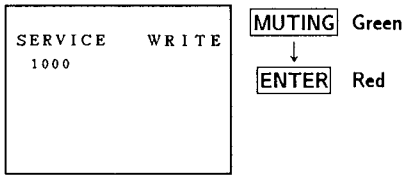
1. Standby mode.(Power off)
2. [DISPLAY] → [5] → [VOL (+)] → [POWER] on the Remote Commander. (Press each button within a second.)

SERVICE ADJUSTMENT MODE IN

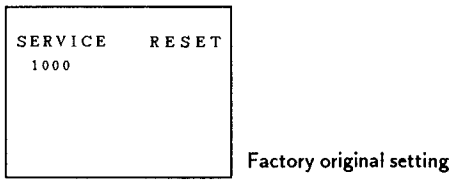


3. The CRT displays the item Being adjusted.
4. Press [1] or [4] on the Remote Commander to select the item.
5. Press [3] or [6] on the Remote Commander to change the data.
6. Press [MUTING] then [ENTER] to write into memory.

SERVICE ADJUSTMENT MODE MEMORY



7. Press [8] then [ENTER] on the Remote Commander to initlalize.



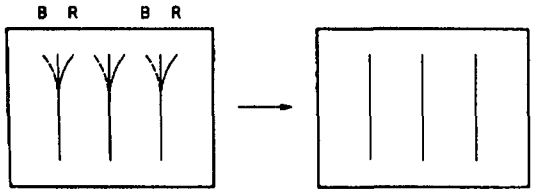
8. Turn set off and on to exit.

- Set to Service Mode.
- Input a cross-hatch signal.
- Press [1] and [4] serect an item of adjustments.
- Adjust [3] and [6] to the best picture.

No.	Disp.	Item	Ave.Data
39	UYBO	Upper Y-Bow	31
40	LYBO	Lower Y-Bow	25
41	HAMP	H. Amp	33
42	HTIL	H. Tilt	33
43	UCBO	Upper C-Bow	38
44	UTIL	Upper Tilt	40
45	LCBO	Lower C-Bow	41
46	LTIL	Lower Tilt	46
47	DCSH	DC Shift	37

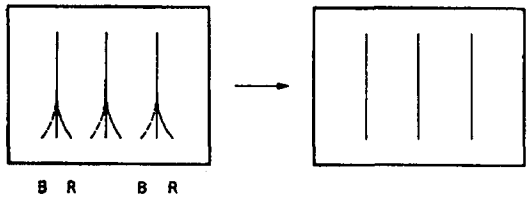
U. YBOW

Select UYBO with [1] and [4]



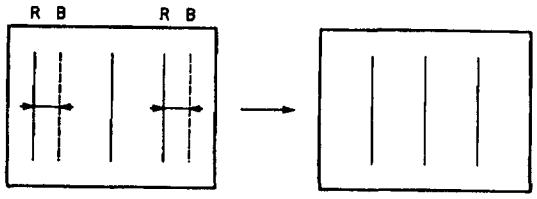
L. YBOW

Select LYBO with [1] and [4]



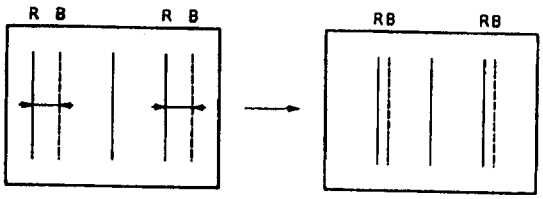
H. AMP

Select HAMP with [1] and [4]



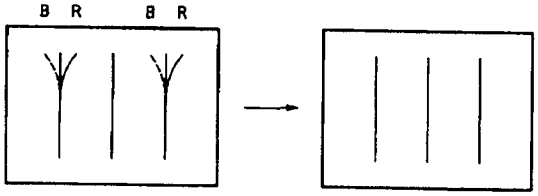
H. TILT

Select HTILT with 1 and 4



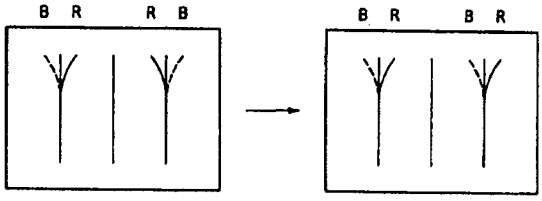
U. CBOW

Select UCBO with 1 and 4



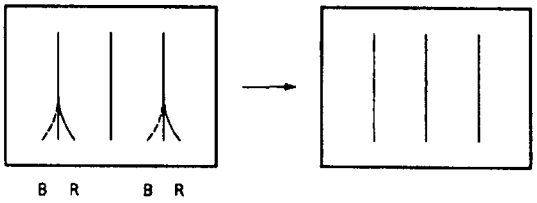
U. TILT

Select UTIL with 1 and 4



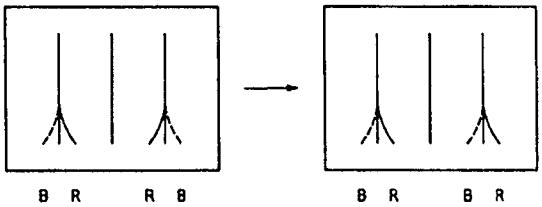
L. CBOW

Select LCBO with 1 and 4

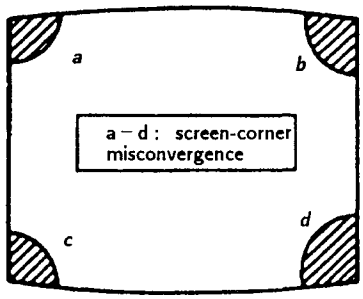


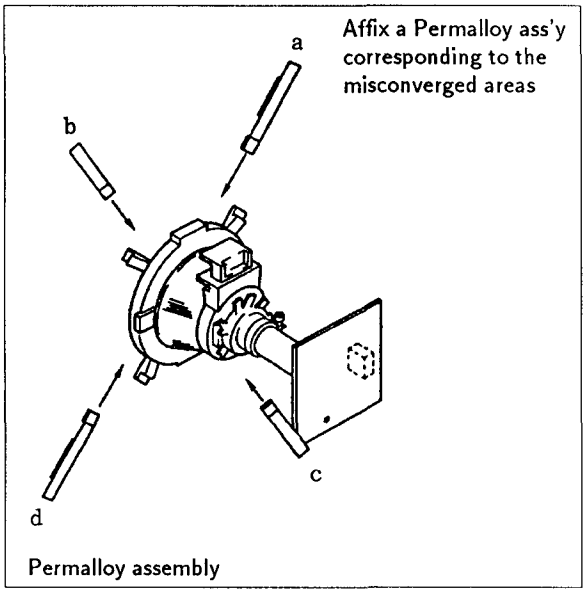
L. TILT

Select L. TIL with 1 and 4



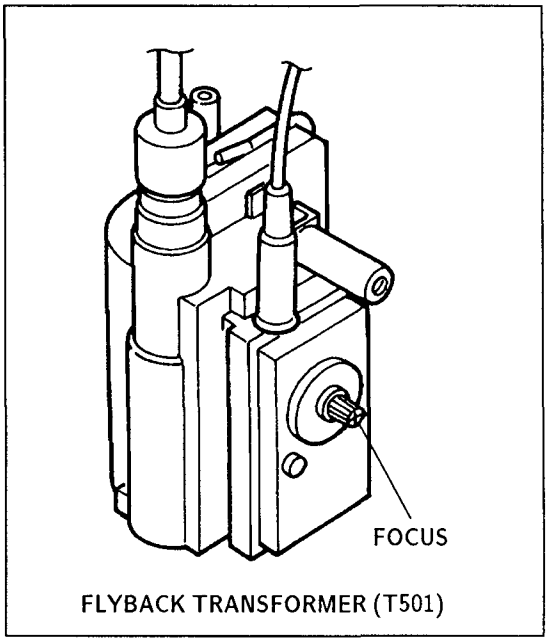
(4) Screen-corner Convergence





3-3. FOCUS ADJUSTMENT

Adjust FOCUS control on the flyback transformer for a best focus.



3-4. G2 (SCREEN) AND WHITE BALANCE ADJUSTMENTS

1. G 2 (SCREEN) ADJUSTMENT(RV 702)

1. Set the PICTURE and BRIGHTNESS to normal.
2. Confirm G 1 voltage is within 30.0±5 V.
3. Apply DC voltage of 180 V to the cathodes of R,G and B from DC stabilized power source.
4. While watching the picture, adjust the G2 control (RV 702) to the just the retrace line disappears.

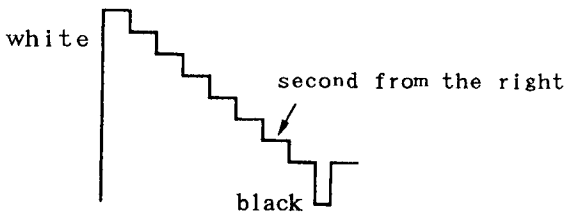
2. WHITE BALANCE ADJUSTMENTS

No.	Disp.	Item	Ave. Data
14	GAMP	Green Amp	20
15	BAMP	Blue Amp	17
16	GCUT	Green Cut-off	7
17	BCUT	Blue Cut-off	8
22	SBRT	Sub Bright	35

1. Input an entire white signal.
2. Set to service adjustment mode.
3. Set the PICTURE and BRIGHT to minimum.
4. Adjust with SBRT if necessary.
5. Select G CUT and B CUT with [1] and [4].
6. Adjust with [3] and [6] for the best white balance.
7. Set the PICTURE and BRIGHT to maximum.
8. Select GAMP and BAMP with [1] and [4].
9. Adjust with [3] and [6] for the best white balance.
10. Write into the memory by pressing [MUTING] then [ENTER].

3. SUB BRIGHT ADJUSTMENT

1. Set to service mode.
2. Input a staircase signal of black and white from the pattern generator.
3. BRIGHTNESS ··· RESET
   PICTURE ····· minimum
4. Select SBRT with [1] and [4], and adjust SUB BRIGHT level with [3] and [6] so that the stripe second from the right is dimly lit.



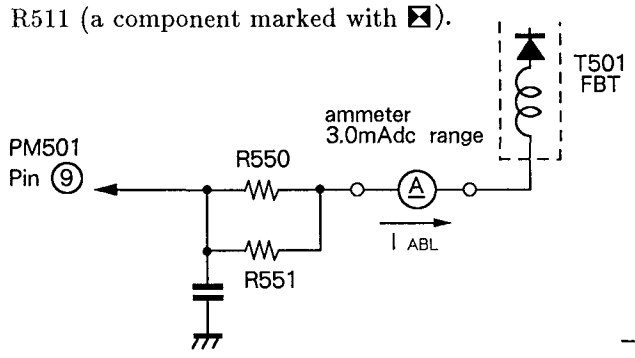
SECTION 4
SAFETY RELATED ADJUSTMENTS

⊠ R511 CONFIRMATION METHOD (HOLD-DOWN CONFIRMATION) AND READJUSTMENTS

The following adjustments should always be performed when replacing the following components (marked with ◪ on the schematic diagram).
PM501, R338, R511, R632, R645, R650

①

1. Preparation before confirmation
   1) Remove R635 on the D board and connect a variable resistor (RV1: about 22kΩ) between pin ① of IC601 and B+ line.
   2) Supply 130±2.0V AC to with variable auto-transformer.
2. Hold-down operation confirmation
   1) Turn the POWER switch ON, and receive entirely white signals and adjust ABL current to 1760±50μA with PICTURE and BRIGHT etc controls.
   2) Increase B+ line voltage gradually by adjusting the resistor of RV1. Confirm that the minimum voltage is less than 142.5V DC (27 inch) 140.0V DC (32 inch) whereby the raster disappears during operation of hold-down circuit.
      NOTE: When the hold-down circuit starts operating, switch OFF the POWER of the set immediately.
   3) Turn the POWER switch ON, and receive dot signals and adjust ABL current to 160±50μA with PICTURE and BRIGHT etc controls.
   4) Increase B+ line voltage gradually by adjusting the resistor of RV1. Confirm that the minimum voltage is less than 145.0V DC (27 inch), 143.5V DC (32 inch) whereby the raster disappears during operation of hold-down circuit.
      NOTE: When the hold-down circuit starts operating, switch OFF the POWER of the set immediately.
3. Hold-down readjustment
   When step 2 is not satisfied, readjustment should be performed by altering the resistance value of R511 (a component marked with ⊠).



⊠ R524 CONFIRMATION METHOD (HOLD-DOWN CONFIRMATION) AND READJUSTMENTS

The following adjustments should always be performed when replacing the following components (marked with ◪ on the schematic diagram).
IC601, PM501, D504, C598, R338, R509, R524, R632, R635, R645, T501

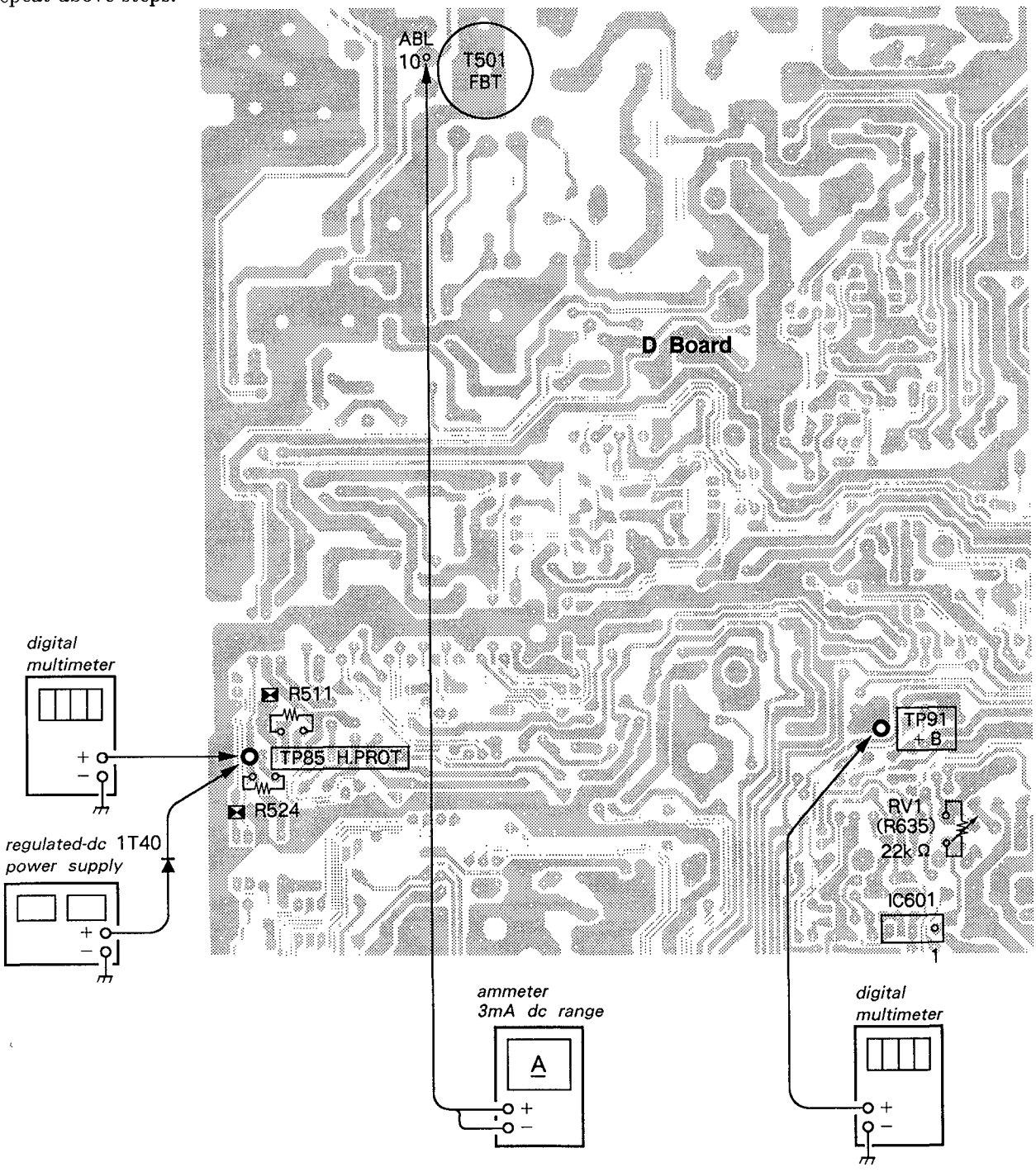
②

1. Preparation before confirmation
   1) Turn the POWER switch ON, and receive entirely white signals and set the PICTURE and BRIGHT controls to maximum.
   2) Confirm that voltage of the check terminal of TP-85 (D BOARD) is more than 114.0V DC (27 inch) 122.3V DC (32inch) when the set is operating normally with 120.0±2.0V AC supply.
2. Hold-down operation confirmation
   1) Turn the POWER switch ON, and receive entirely white signals and adjust ABL current to 1760±50μA with PICTURE and BRIGHT etc controls .
   2) Apply DC voltage of over 130.0V DC gradually to the check terminal of TP-85 (D BOARD) via 1T40 from the DC stabilized power source. Confirm that the minimum voltage is less than 137.5V DC (27inch) 143.5V DC (32inch) whereby the raster disappears during operation of hold-down circuit.
      NOTE: When the hold-down circuit starts operating, switch OFF the POWER of the set immediately.
   3) Turn the POWER switch ON, and receive dot signals and adjust ABL current to 160±50μA with PICTURE and BRIGHT etc controls .
   4) Apply DC voltage of over 130.0V gradually to the check terminal of TP-85 (D BOARD) via 1 T40 from the DC stabilized power source. Confirm that the minimum voltage is less than 138.0V DC (27inch) 144.1V DC (32inch) whereby the raster disappears during operation of hold-down circuit.
      NOTE: When the hold-down circuit starts operating, switch OFF the POWER of the set immediately.
3. Hold-down readjustment
   When step 2 is not satisfied, readjustment should be performed by altering the resistance value of R524 (a component marked with ⊠).

B+ VOLTAGE CONFIRMATION

The following adjustments should always be performed when replacing IC601 and R635.

1) Supply $130 \pm \frac{20}{00}$ V AC to with variable autotransformer.
2) Receive entirely monoscope signal.
3) Set the PICTURE control and the BRIGHT controls in to initial reset.
4) Confirm the voltage of TP91 is less than 137.0V DC.
5) If step 4) is not satisfied, replace IC601 and R635 repeat above steps.



SECTION 5
CIRCUIT ADJUSTMENTS

5-1. ELECTRICAL ADJUSTMENT BY REMOTE COMMANDER

Use of Remote Commander can be performed circuit adjustments about this model.

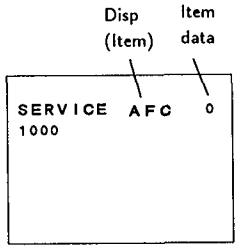
NOTE : Test Equipment Required.
1. Pattern Generator
2. Frequency counter
3. Digital multimeter
4. Audio OSC

1. METHOD OF SETTING THE SERVICE ADJUSTMENT MODE

SERVICE MODE PROCEDURE

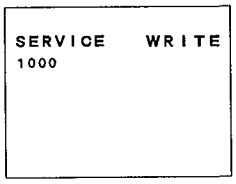
1. Standby mode.(Power off)
2. DISPLAY → 5 → VOL (+) → POWER on the Remote Commander. (Press each button within a second.)

SERVICE ADJUSTMENT MODE IN



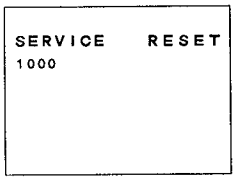
3. The CRT displays the item Being adjusted.
4. Press 1 or 4 on the Remote Commander to select the item.
5. Press 3 or 6 on the Remote Commander to change the data.
6. Press MUTING then ENTER to write into memory.

SERVICE ADJUSTMENT MODE MEMORY



MUTING Green
↓
ENTER Red

7. Press 8 then ENTER on the Remote Commander to initialize.



Carry out step 7) when adjusting IDs 0 to 4 and when replacing and adjusting IC102.

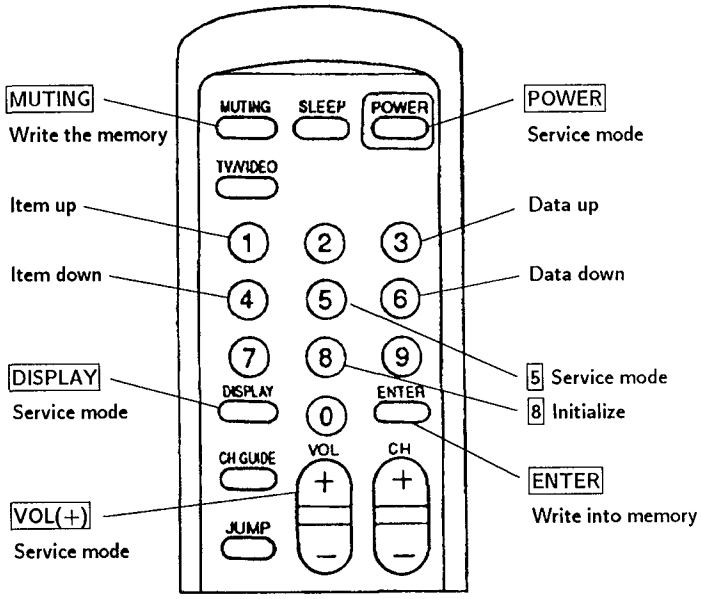
Factory original setting

8. Turn set off and on to exit.

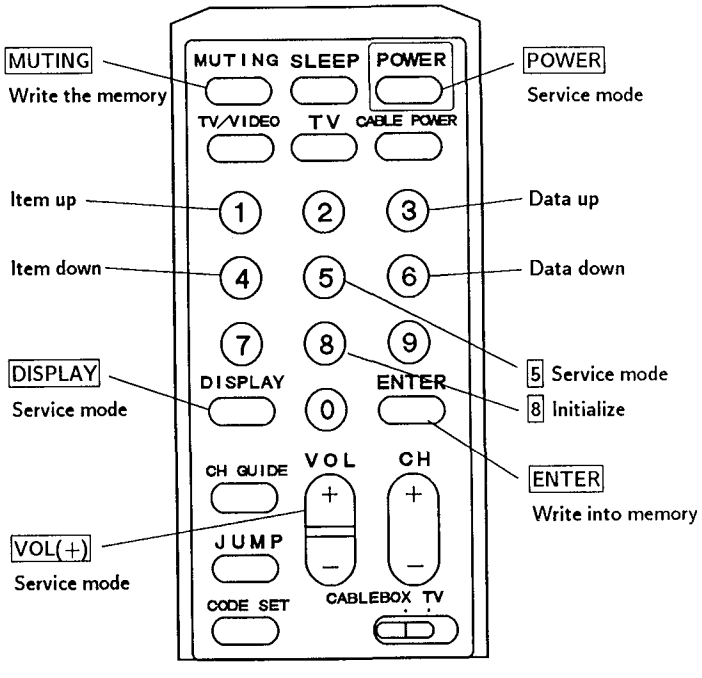
2. MEMORY WRITE CONFIRMATION METHOD

1. After adjustment, pull out the plug from AC outlet, and next place, plug in AC outlet again.
2. Turn the power switch ON and set to Service Mode.
3. Call the adjusted items again, confirm they were adjusted.

3. ADJUST BUTTONS AND INDICATOR



RM-Y116



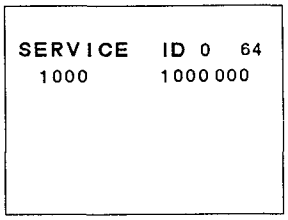
RM-Y117/RM-Y118

4. AN ITEM OF ADJUSTMENTS

No.	Disp.	Item	Data range	Ave. data (27 inch)	Ave. data (32 inch)
1	AFC	AFC Loop Gain	0~3	* 0	* 0
2	HFRE	H. Frequency	0~127	70	70
3	VFRE	V. Frequency	0~31	16	16
4	VPOS	V. Center	0~31	17	17
5	VSIZ	V. Size	0~63	28	12
6	VLIN	V. Linearity	0~15	8	7
7	VSCO	V. Correction	0~15	6	6
8	HPOS	H. Center	0~15	6	5
9	HSIZ	H. Size	0~31	31	27
10	PAMP	Pin Amp	0~31	24	31
11	CPIN	Corner Pin	0~7	3	0
12	PPHA	Pin Phase	0~15	6	4
13	VCOM	V. Compensation	0~7	* 2	* 2
14	GAMP	Green Amp	0~31	20	20
15	BAMP	Blue Amp	0~31	17	17
16	GCUT	Green Cut Off	0~15	7	7
17	BCUT	Blue Cut Off	0~15	8	8
18	CROM	Chroma Trap	0~63	* 28	* 28
19	SPIX	Sub Contrast	0~63	20	20
20	SHUE	Sub Hue	0~63	33	33
21	SCOL	Sub Color	0~63	32	32
22	SBRT	Sub Bright	0~63	35	35
23	RGBP	RGB Picture	0~63	* 10	* 10
24	SHAP	Sharpness	0~15	* 7	* 7
25	VSMO	V Pull in Range	0, 1	* 0	* 0
26	REF	Refference line	0~3	* 2	* 2
27	ROFF	Red Out	0, 1	1	1
28	GOFF	Green Out	0, 1	1	1
29	BOFF	Blue Out	0, 1	1	1
30	ABLM	ABL Mode	0, 1	* 0	* 0
31	NOTC	Notch On/Off	0, 1	* 1	* 1
32	DRGB	OSD intensity	0, 1	* 0	* 0
33	VANG	V. Angle	0~63	0	0
34	DISP	Display Position	0~63	40	40
35	SVOL	Sub Volume	0~15	* 0	* 0
36	SBAL	Sub Balance	0~15	7	7
37	BASS	Sub Bass	0~15	* 8	* 8
38	TRE	Sub Treble	0~15	* 7	* 7
39	UYBO	Upper Y. Bow	0~63	—	31
40	LYBO	Lower Y. Bow	0~63	—	25
41	HAMP	H. Amp	0~63	—	33
42	HTIL	H. Tilt	0~63	—	33
43	UCBO	Upper C. Bow	0~63	—	38
44	UTIL	Upper Tilt	0~63	—	40
45	LCBO	Lower C. Bow	0~63	—	41
46	LTIL	Lower Tilt	0~63	—	46
47	DCSH	DC. Shift	0~63	—	37
48	PHPO	PinP H Position	0~127	76	76
49	PHUE	PinP Hue	0~31	* 0	* 0
50	ID-0	Model ID	0~127	by Model	by Model
51	ID-1	Model ID	0~127	by Model	by Model
52	ID-2	Model ID	0~127	by Model	by Model
	ID-2	Model ID	0~127	by Model	by Model
	ID-2	Model ID	0~127	by Model	by Model
53	ID-3	Model ID	0~127	by Model	by Model
54	ID-4	Model ID	0~127	by Model	by Model

* : Set-up value

Note : No.from 1 to 54 is to show adjusment order



Please adjust the function values as shown below when IC 102 on M board was replaced.

KV-27TS29 (US)

No.	Disp.	Disp.	Data
50	ID-0	1 0 0 0 0 0 0	64
51	ID-1	1 1 1 1 1 1 1	127
52	ID-2	1 0 0 0 0 0 0	64
53	ID-3	0 0 0 0 0 0 0	0
54	ID-4	0 0 1 0 0 0 0	16

KV-27TS29 (CND)

No.	Disp.	Disp.	Data
50	ID-0	1 0 0 0 0 0 0	64
51	ID-1	1 1 1 1 1 1 1	127
52	ID-2	0 0 0 0 0 0 0	0
53	ID-3	0 0 0 0 0 0 0	0
54	ID-4	0 0 1 0 0 0 0	16

KV-27TS32 (US)

No.	Disp.	Disp.	Data
50	ID-0	1 1 1 1 0 0 0	120
51	ID-1	1 1 1 1 1 1 1	127
52	ID-2	1 1 0 1 0 0 0	104
53	ID-3	0 0 0 0 0 0 0	0
54	ID-4	0 0 1 0 0 0 0	16

KV-27TS36/32TS36 (US)

No	Disp.	Disp.	Data
50	ID-0	1 1 1 1 0 0 0	120
51	ID-1	1 1 1 1 1 1 1	127
52	ID-2	1 0 0 1 0 0 0	72
53	ID-3	1 0 0 0 0 0 0	64
54	ID-4	0 0 1 0 0 0 0	16

KV-27TS36/32TS36 (CND)

No.	Disp.	Disp.	Data
50	ID-0	1 1 1 1 0 0 0	120
51	ID-1	1 1 1 1 1 1 1	127
52	ID-2	0 0 0 1 0 0 0	8
53	ID-3	1 0 0 0 0 0 0	64
54	ID-4	0 0 1 0 0 0 0	16

KV-32TS46 (US)

No.	Disp.	Disp.	Data
50	ID-0	1 1 1 1 0 0 0	120
51	ID-1	1 1 1 1 1 1 1	127
52	ID-2	1 0 0 1 0 0 0	72
53	ID-3	0 1 0 0 1 0 0	36
54	ID-4	0 0 1 0 0 0 0	16

KV-32TS46 (CND)

No.	Disp.	Disp.	Data
50	ID-0	1 1 1 1 0 0 0	120
51	ID-1	1 1 1 1 1 1 1	127
52	ID-2	0 0 0 1 0 0 0	8
53	ID-3	0 1 0 0 1 0 0	36
54	ID-4	0 0 1 0 0 0 0	16

5-2. M BOARD ADJUSTMENTS

H.FREQUENCY ADJUSTMENT (HFRE)

1. Input a color-bar signal.
2. Set to Service adjustment Mode.
3. Connect a frequency counter to CN131 Pin⑬ (H. DRIVE) connector and ground.
4. Call the item of AFC, set to 3 level (free run).
5. Select HFRE with 1 and 4.
6. Adjust with 3 and 6 for the 15734± 60Hz.
7. Call the item of AFC again, adjust the level" 0 ".
8. Write into the memory by pressing MUTING then ENTER.

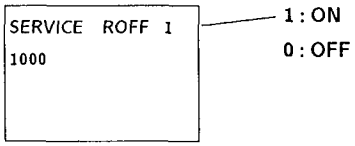
V.FREQUENCY ADJUSTMENT (VFRE)

1. Select video 1 with no connecting the signal.
2. Set to Service adjustment Mode.
3. Connect the frequency counter across connectorCN131 Pin⑦ (V. DRIVE) connector and ground.
4. Select VFRE with 1 and 4.
5. Adjust with 3 and 6 for the 55 ±0.5Hz.
6. Write the memory by pressing MUTING then ENTER .

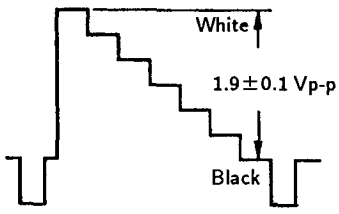
SUB CONTRAST ADJUSTMENT (SPIX)

1. Input a color-bar signal.
2. Set to Service adjustment Mode.
3. Set the conditions as follows.

PICTURE	·· ·	MAX
COLOR	· ·	MIN
BRIGHT	· ··	CENTER
R OFF	·····	ON (1)
G OFF	· ··	OFF (0)
B OFF	····· ·	OFF (0)



4. Connect an oscilloscope to CN703 Pin① (R OUT) of C board and ground.
5. Select SPIX with 1 and 4.
6. Adjust with 3 and 6 for the 1.9±0.1Vp-p.

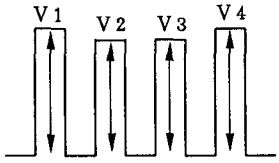


7. Write the memory by pressing MUTING then ENTER .
8. Return the following back to normal after adjustment.

PICTURE	·····	MAX
BRIGHT	··· ·	CENTER
COLOR	···· ·	CENTER
R OFF	· ····	ON
G OFF	····· ·	ON
B OFF	··· ····	ON

SUB HUE, SUB COLOR ADJUSTMENT (SHUE, SCOL)

1. Input a color-bar signal.
2. Set to service adjustment mode.
3. Connect an oscilloscope to CN703 Pin③ (B OUT) of C board.
4. Select SHUE and SCOL with 1 and 4.
5. Adjust with 3 and 6 for the V1=V4 (SCOR) and V2 =V3 (SHUE).



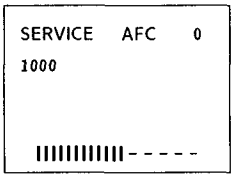
6. Increase the data of SCOL by 5 steps.
7. Write into the memory by pressing MUTING then ENTER .

SUB BARANCE ADJUSTMENT (SBAL)

1. Input a stereo signal.
2. Set to service adjustment mode.
3. Select SBAL with 1 and 4.
4. Adjust with 3 and 6 for the best sound balance
5. Write into the memory by pressing MUTING then ENTER .

DISPLAY POSITION ADJUSTMENT (DISP)

1. Input a color-bar signal.
2. Set to service adjustment Mode.
3. Select DISP with 1 and 4.
4. Adjust with 3 and 6 for the bar center.
5. Write the memory by pressing MUTING then ENTER .



H.CENTER ADJUSTMENT (H POS)

Note: Perform this adjustment after H.FREQUENCY ADJUSTMENT (HFRE).

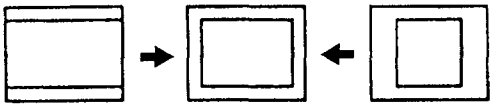
1. Input a cross-hatch signal.
2. Set the Service adjustment mode.
3. Select HPOS with [1] and [4].
4. Adjust with [3] and [6] to the best horizontal center.
5. Write into the memory by pressing [MUTING] then [ENTER].

H. CENTER (HPOS)

H.SIZE ADJUSTMENT (HSIZ)

1. Input a cross-hatch signal.
2. Set to service adjustment Mode.
3. Select HSIZ with [1] and [4].
4. Adjust with [3] and [6] for best horizontal size.
5. Write into the memory by pressing [MUTING] then [ENTER].

H. SIZE (HSIZ)



V.CENTER ADJUSTMENT (VPOS)

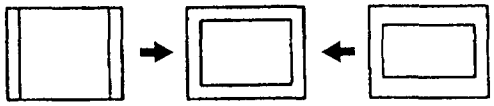
1. Input a cross-hatch signal.
2. Set to service adjustment Mode.
3. Select VPOS with [1] and [4].
4. Adjust with [3] and [6] for the best vertical senter.
5. Write into the memory by pressing [MUTING] then [ENTER].

V. CENTER (VPOS)

V.SIZE ADJUSTMENT (VSIZ)

1. Input a cross-hatch signal.
2. Set to service adjustment Mode.
3. Select VSIZ with [1] and [4].
4. Adjust with [3] and [6] for the best vertical size.
5. Write into the memory by pressing [MUTING] then [ENTER].

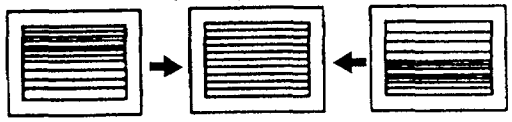
V. SIZE (VSIZ)



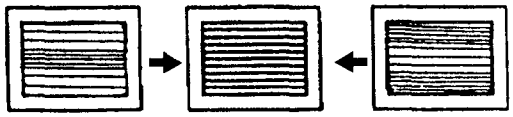
V LINEARITY(VLIN), VS CORRECTION(VSCO), PIN AMP(PAMP), CORNER PIN(CPIN), AND PIN PHASE(PPHA) ADJUSTMENTS

1. Input a cross-hatch signal.
2. Set to Service adjustment Mode.
3. Select VLIN, VSCO, PAMP, CPIN, and PPHA with [1] and [4].
4. Adjust with [3] and [6] for the best picture.
5. Write the memory byPressing [MUTING] then [ENTER].

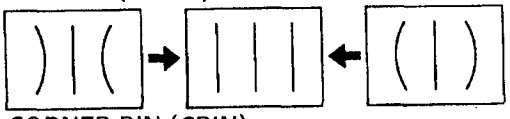
V LINEARITY (VLIN)



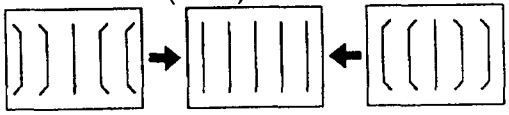
VS CORRECTION (VSCO)



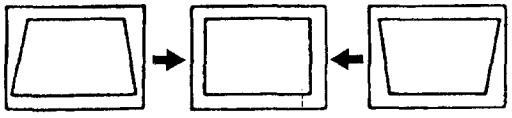
PIN AMP (PAMP)



CORNER PIN (CPIN)

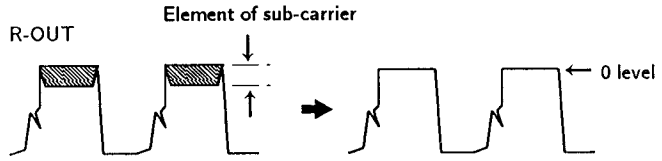


PIN PHASE (PPHA)



CROMA TRAP ADJUSTMENT (CROM)

1. Input a red signal
2. Set to Service adjustment Mode.
3. Connect an oscilloscope CN703 Pin① (R OUT) of C board ground.
4. Select CROM with 1 and 4.
5. Adjust with 3 and 6 for the 0 level.

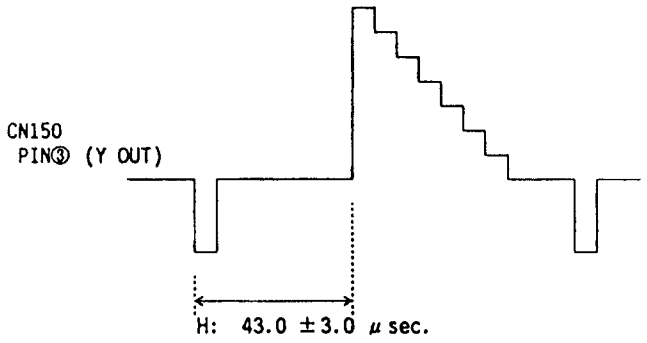


6. Write the memory by pressing MUTING then ENTER .

5-3. P BOARD ADJUSTMENTS

P IN P H. POSITION (PHPO)

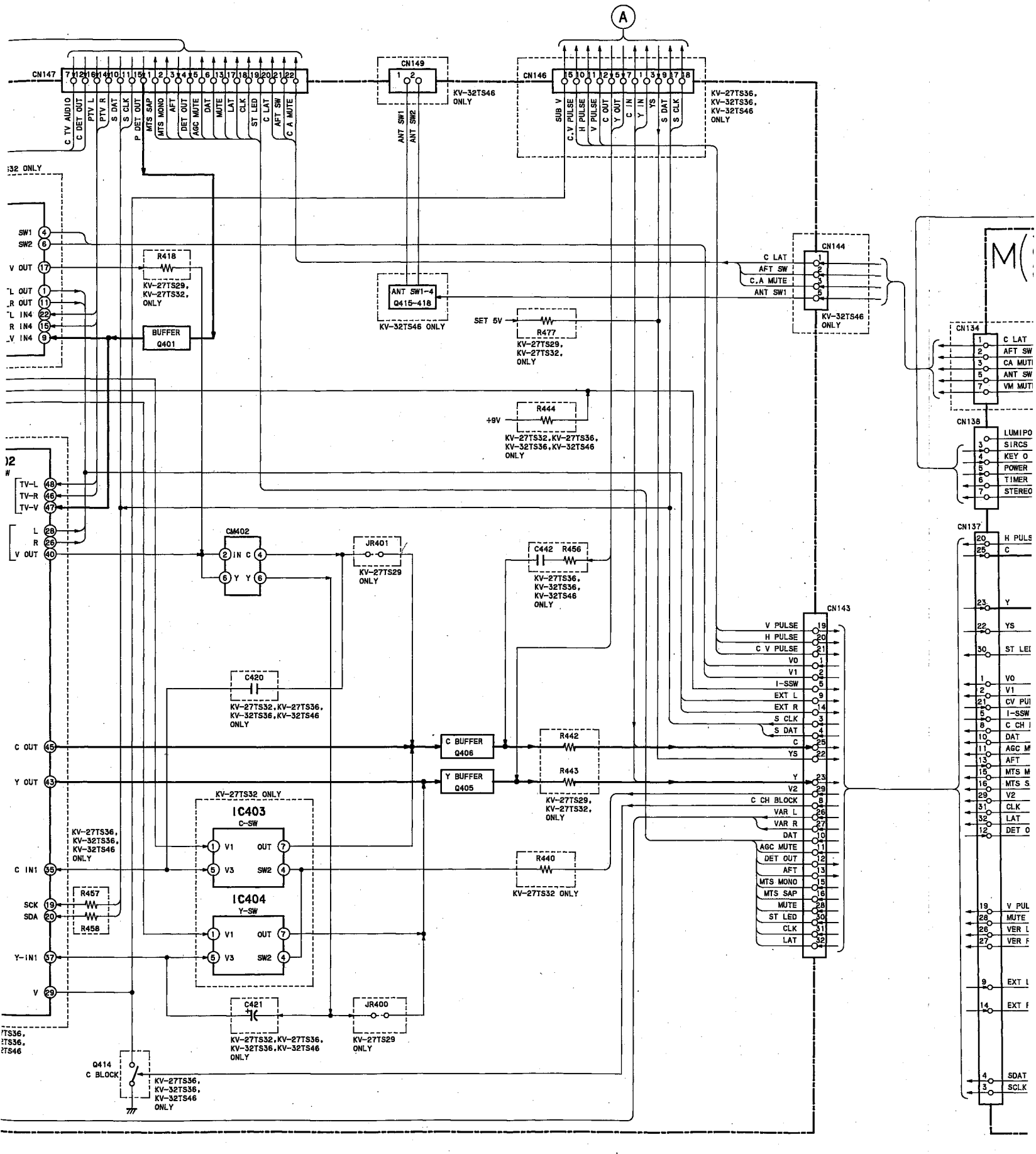
1. Input a color-bar signal
2. Set to Service adjustment Mode.
3. Connect an oscilloscope CN150 Pin③ (Y OUT).
4. Select PHPO with 1 and 4.
5. Adjust with 3 and 6 for the 43.0±3.0 μsec (H).

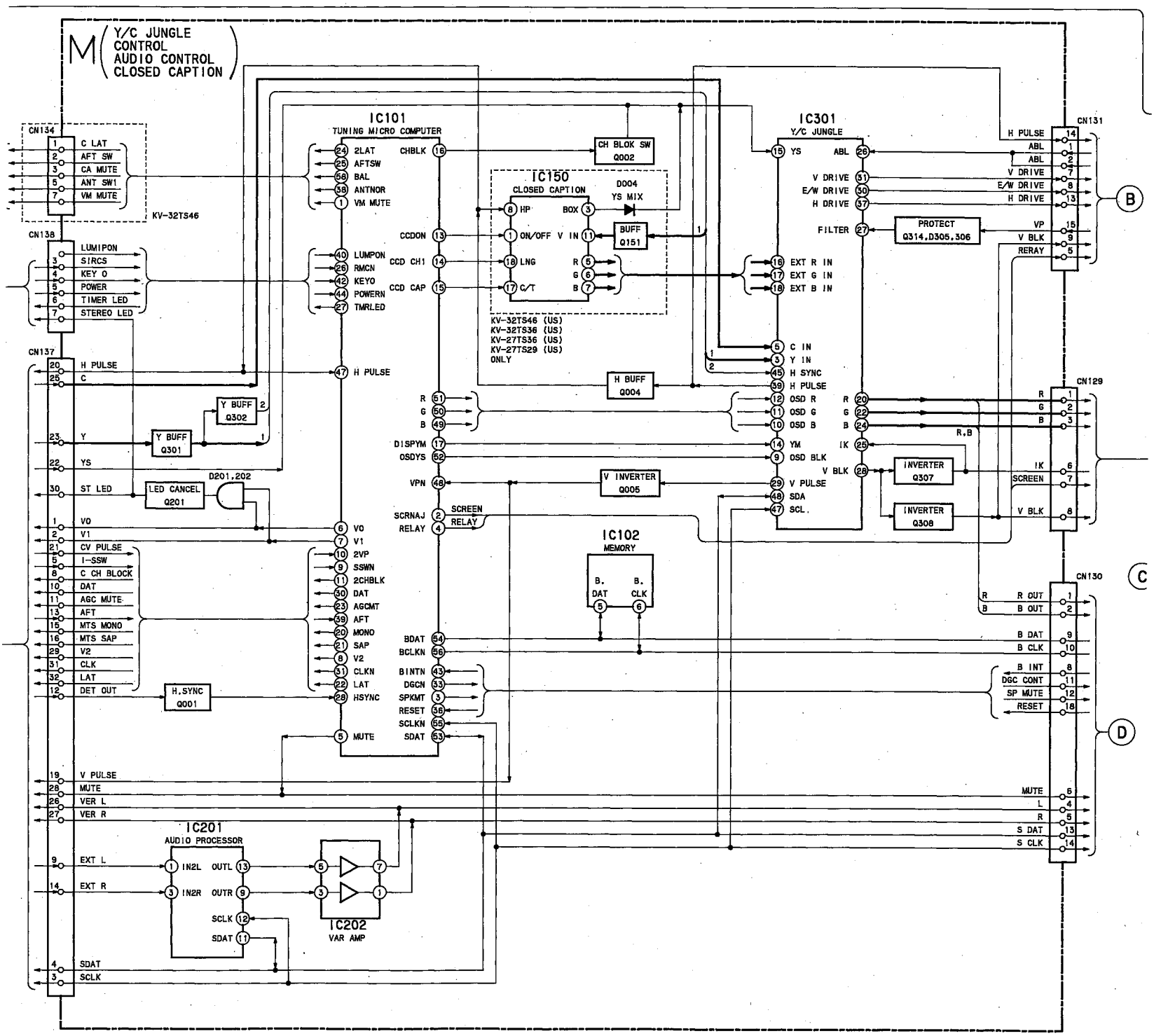


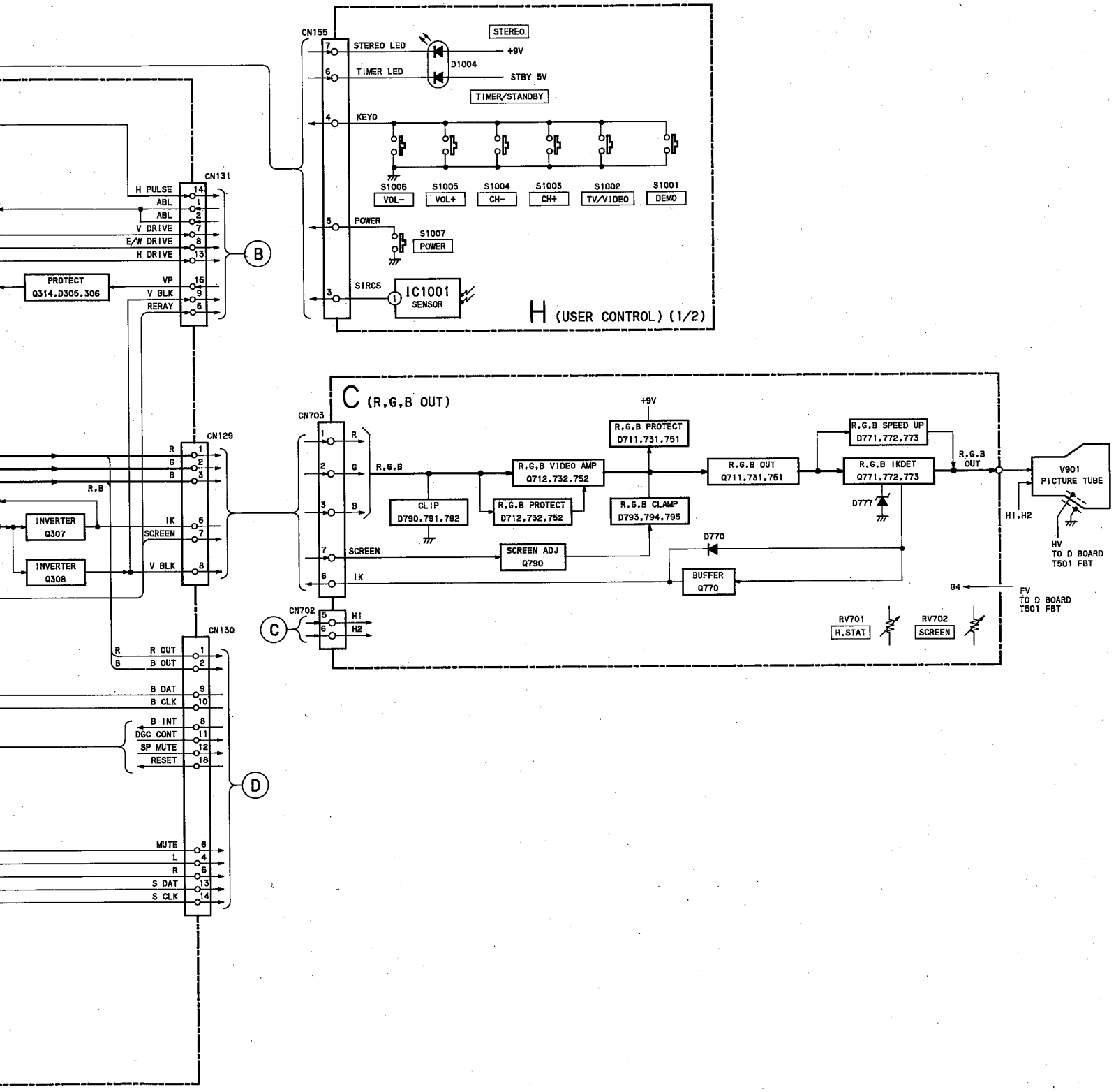
6. Write the memory by pressing MUTING then ENTER .

SECTION 6
DIAGRAMS

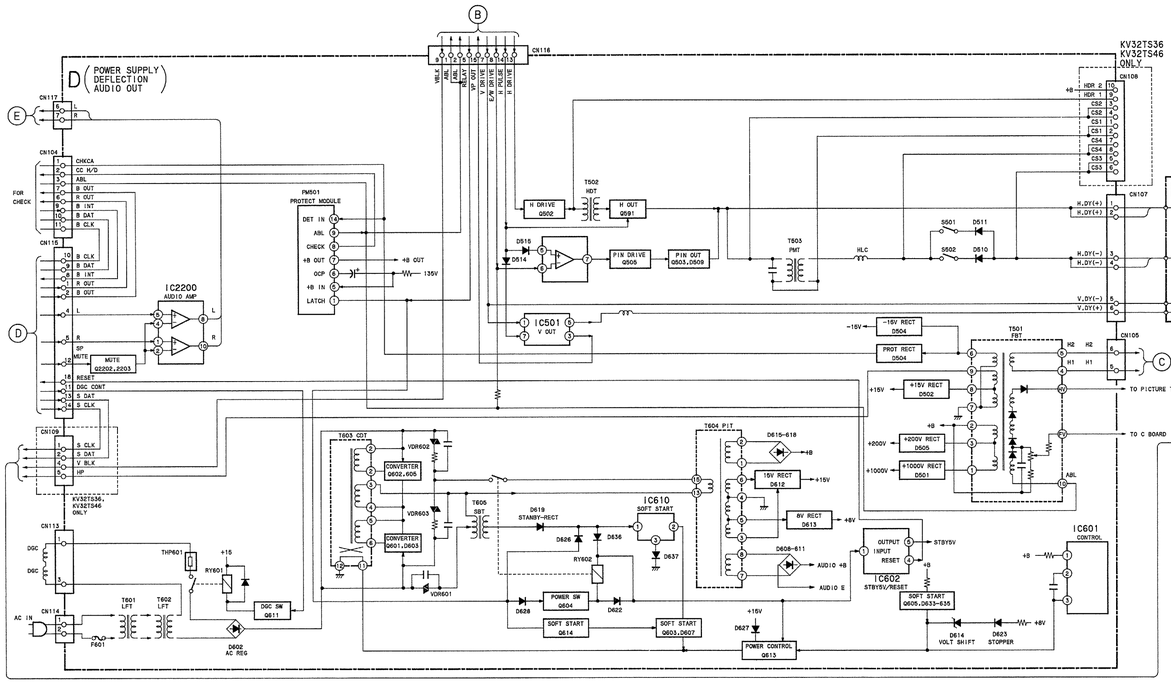
KV-27TS29/27TS32/27TS36 RM-Y116 RM-Y117 RM-Y118
KV-32TS36/32TS46 RM-Y118 RM-Y118 SA-W200

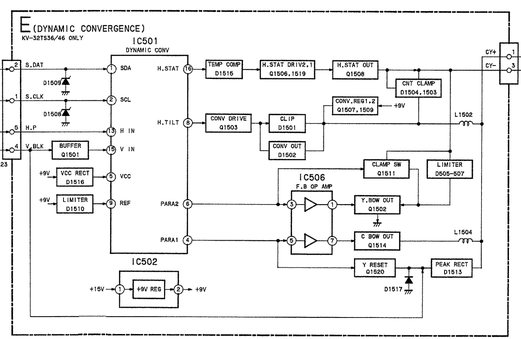

A
CN147
CN149
CN146
KV-32TS46 ONLY
KV-27TS36, KV-32TS36, KV-32TS46 ONLY
C TV AUDIO
C DET OUT
P7V L
P7V R
S DAT
S CLK
P DET OUT
MTS SAP
MTS MONO
AFT
DET OUT
AGC MUTE
DAT
MUTE
LAT
CLK
ST LED
C LAT
AFT SW
C.A MUTE
ANT SW1
ANT SW2
SUB V
C.V PULSE
H PULSE
V PULSE
C OUT
Y OUT
C IN
Y IN
YS
S DAT
S CLK
CN144
C LAT
AFT SW
C.A MUTE
ANT SW1
KV-32TS46 ONLY
ANT SW1-4
Q415-418
KV-32TS46 ONLY
SET 5V
R477
KV-27TS29, KV-27TS32, ONLY
R418
KV-27TS29, KV-27TS32, ONLY
BUFFER
Q401
+9V
R444
KV-27TS32,KV-27TS36, KV-32TS36,KV-32TS46 ONLY
CN134
CN138
CN137
CM402
JR401
KV-27TS29 ONLY
C442 R456
KV-27TS36, KV-32TS36, KV-32TS46 ONLY
CN143
V PULSE
H PULSE
C V PULSE
VO
V1
I-SSW
EXT L
EXT R
S CLK
S DAT
C
YS
Y
V2
C CH BLOCK
VAR L
VAR R
DAT
AGC MUTE
DET OUT
AFT
MTS MONO
MTS SAP
MUTE
ST LED
CLK
LAT
C420
KV-27TS32,KV-27TS36, KV-32TS36,KV-32TS46 ONLY
C BUFFER
Q406
Y BUFFER
Q405
R442
R443
KV-27TS29, KV-27TS32, ONLY
KV-27TS32 ONLY
IC403
C-SW
IC404
Y-SW
V1
V3
OUT
SW2
KV-27TS36, KV-32TS36, KV-32TS46 ONLY
R457
R458
R440
KV-27TS32 ONLY
C421
JR400
KV-27TS32,KV-27TS36, KV-32TS36,KV-32TS46 ONLY
KV-27TS29 ONLY
Q414
C BLOCK
KV-27TS36, KV-32TS36, KV-32TS46 ONLY

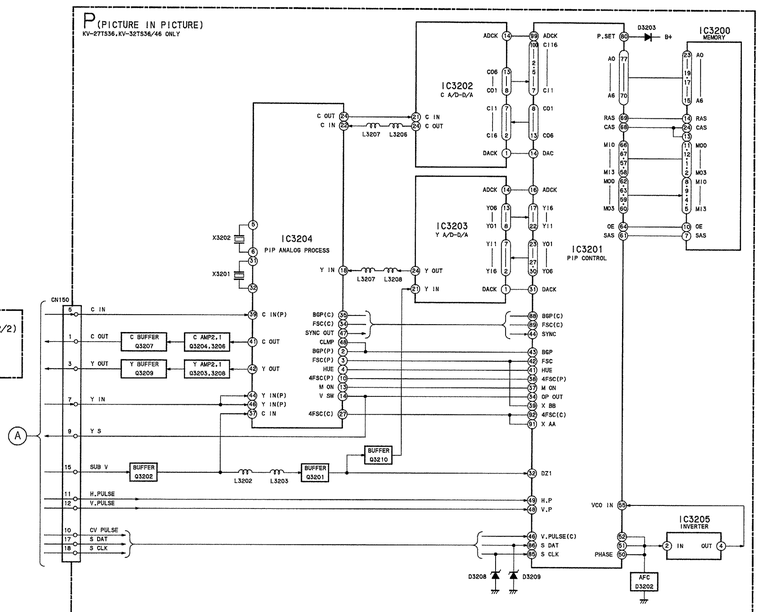

M Y/C JUNGLE CONTROL AUDIO CONTROL CLOSED CAPTION
IC101 TUNING MICRO COMPUTER
IC301 Y/C JUNGLE
IC150 CLOSED CAPTION
IC102 MEMORY
IC201 AUDIO PROCESSOR
IC202 VAR AMP
CN134
CN138
CN137
CN131
CN129
CN130
KV-32TS46
KV-32TS46 (US)
KV-32TS36 (US)
KV-27TS36 (US)
KV-27TS29 (US)
ONLY
CH BLOK SW Q002
BUFF Q151
H BUFF Q004
V INVERTER Q005
Y BUFF Q301
Y BUFF Q302
LED CANCEL Q201
H.SYNC Q001
INVERTER Q307
INVERTER Q308
PROTECT Q314,D305,306
SCREEN RELAY
C LAT
AFT SW
CA MUTE
ANT SW1
VM MUTE
LUMIPON
SIRCS
KEY O
POWER
TIMER LED
STEREO LED
H PULSE
C
Y
YS
ST LED
VO
V1
CV PULSE
I-SSW
C CH BLOCK
DAT
AGC MUTE
AFT
MTS MONO
MTS SAP
V2
CLK
LAT
DET OUT
V PULSE
MUTE
VER L
VER R
EXT L
EXT R
SDAT
SCLK
2LAT
AFTSW
BAL
ANTNOR
VM MUTE
LUMPON
RMCN
KEYO
POWERN
TMRLED
H PULSE
VO
V1
2VP
SSWN
2CHBLK
DAT
AGCMT
AFT
MONO
SAP
V2
CLKN
LAT
HSYNC
MUTE
CHBLK
CCDON
CCD CH1
CCD CAP
R
G
B
DISPYM
OSDYS
VPN
SCRNAJ
RELAY
BDAT
BCLKN
BINTN
DGCN
SPKMT
RESET
SCLKN
SDAT
HP
BOX
ON/OFF
V IN
LNG
C/T
D004 YS MIX
C IN
Y IN
H SYNC
H PULSE
OSD R
OSD G
OSD B
OSD BLK
YM
V PULSE
SDA
SCL
EXT R IN
EXT G IN
EXT B IN
YS
ABL
V DRIVE
E/W DRIVE
H DRIVE
FILTER
VP
V BLK
RERAY
IK
SCREEN
R,B
B.DAT
B.CLK
B DAT
B CLK
B INT
DGC CONT
SP MUTE
RESET
R OUT
B OUT
S DAT
S CLK
IN2L
IN2R
OUTL
OUTR
SCLK
SDAT
D201,202
B
C
D

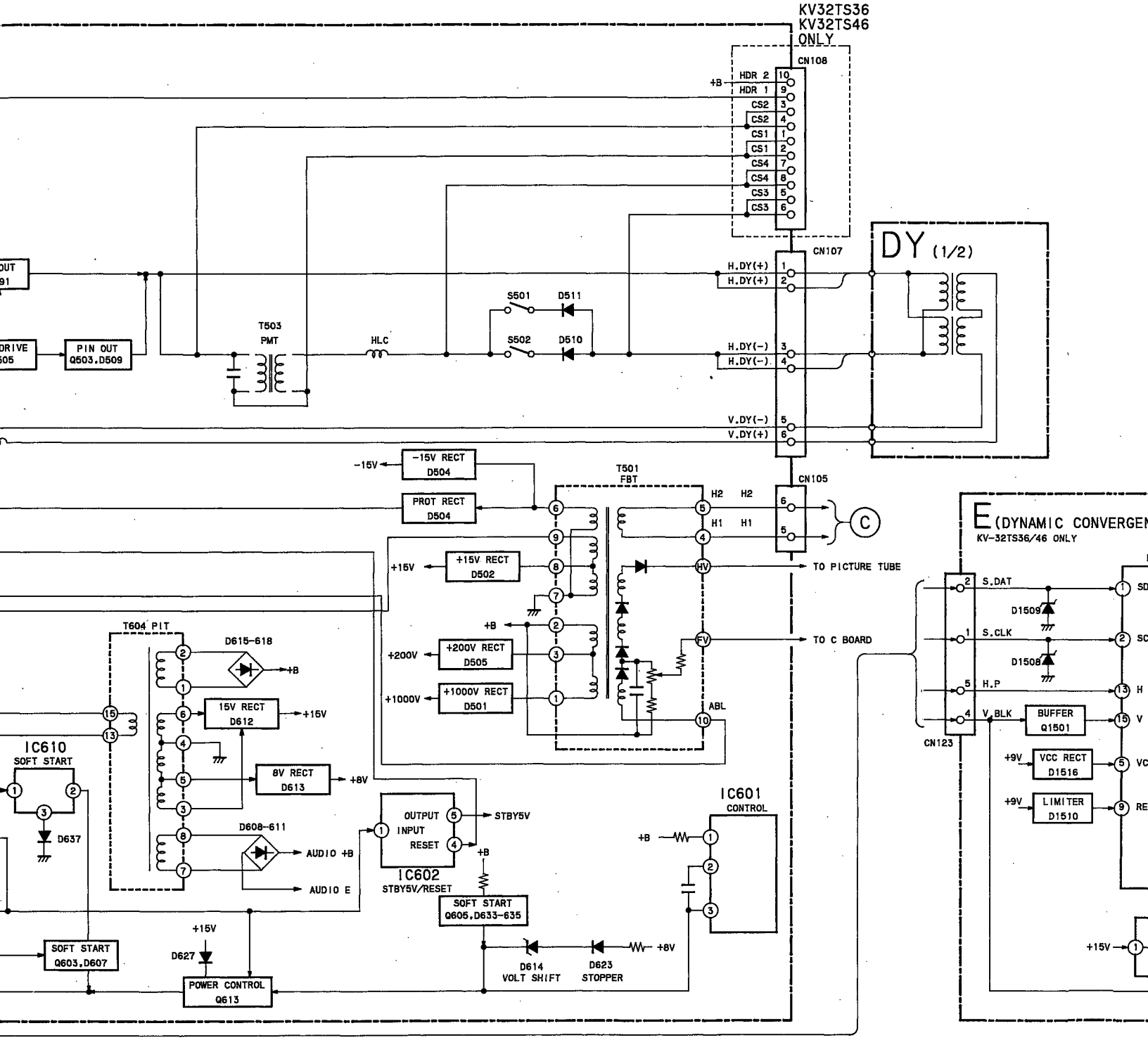

CN155
STEREO LED
TIMER LED
KEY0
POWER
SIRCS
STEREO
+9V
D1004
STBY 5V
TIMER/STANDBY
S1006 VOL−
S1005 VOL+
S1004 CH−
S1003 CH+
S1002 TV/VIDEO
S1001 DEMO
S1007 POWER
IC1001 SENSOR
H (USER CONTROL) (1/2)
CN131
H PULSE
ABL
ABL
V DRIVE
E/W DRIVE
H DRIVE
PROTECT Q314,D305,306
VP
V BLK
RERAY
B
C (R,G,B OUT)
CN703
R
G
B
SCREEN
IK
R,G,B
CLIP D790,791,792
R,G,B VIDEO AMP Q712,732,752
R,G,B PROTECT D712,732,752
R,G,B PROTECT D711,731,751
R,G,B CLAMP D793,794,795
+9V
R,G,B OUT Q711,731,751
R,G,B SPEED UP D771,772,773
R,G,B IKDET Q771,772,773
D777
R,G,B OUT
V901 PICTURE TUBE
H1,H2
HV TO D BOARD T501 FBT
SCREEN ADJ Q790
D770
BUFFER Q770
G4
FV TO D BOARD T501 FBT
RV701 H.STAT
RV702 SCREEN
CN702
H1
H2
C
CN129
R
G
B
R,B
INVERTER Q307
INVERTER Q308
IK
SCREEN
V BLK
CN130
R OUT
B OUT
B DAT
B CLK
B INT
DGC CONT
SP MUTE
RESET
D
MUTE
L
R
S DAT
S CLK

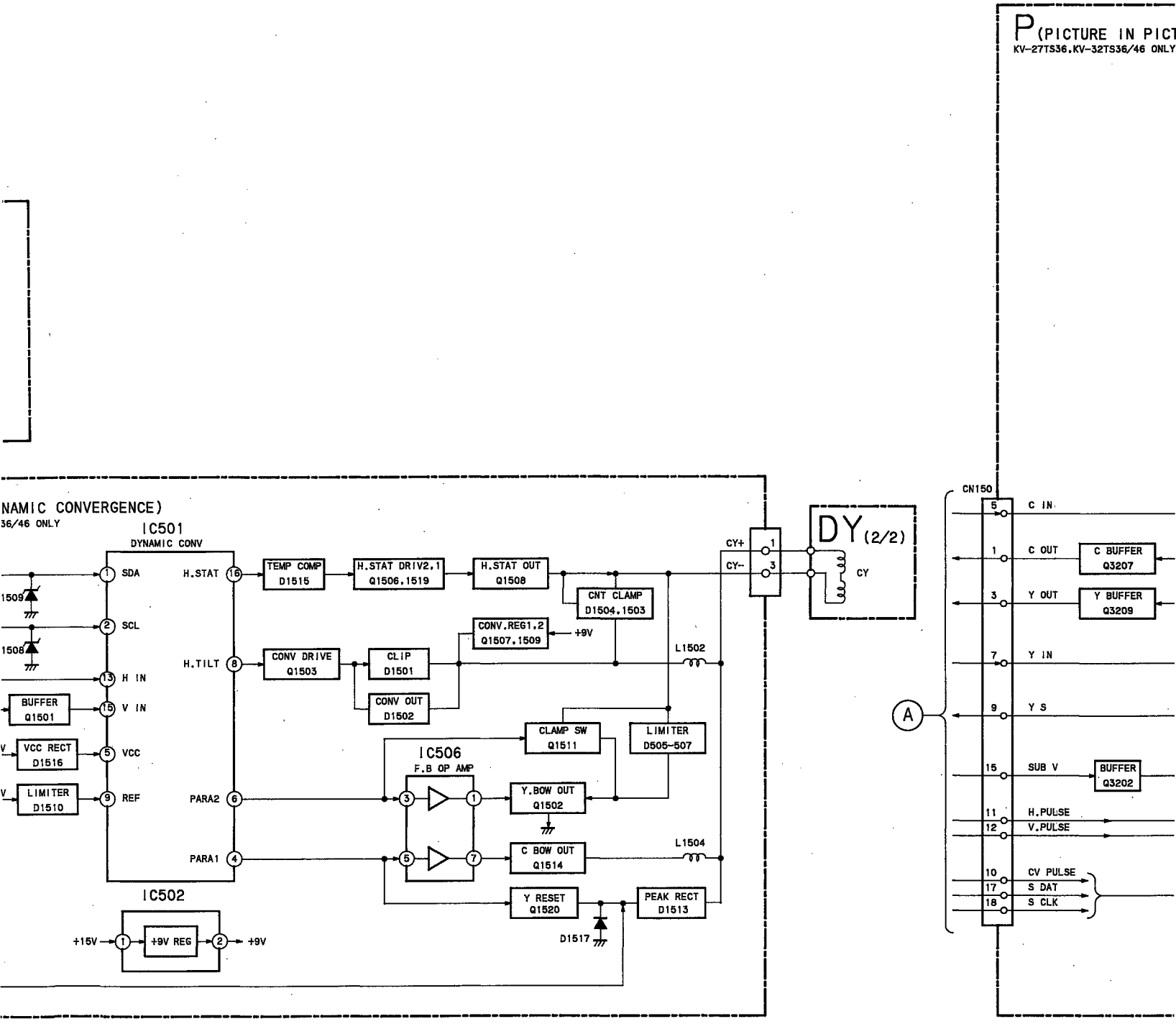
BLOCK DIAGRAMS (2)

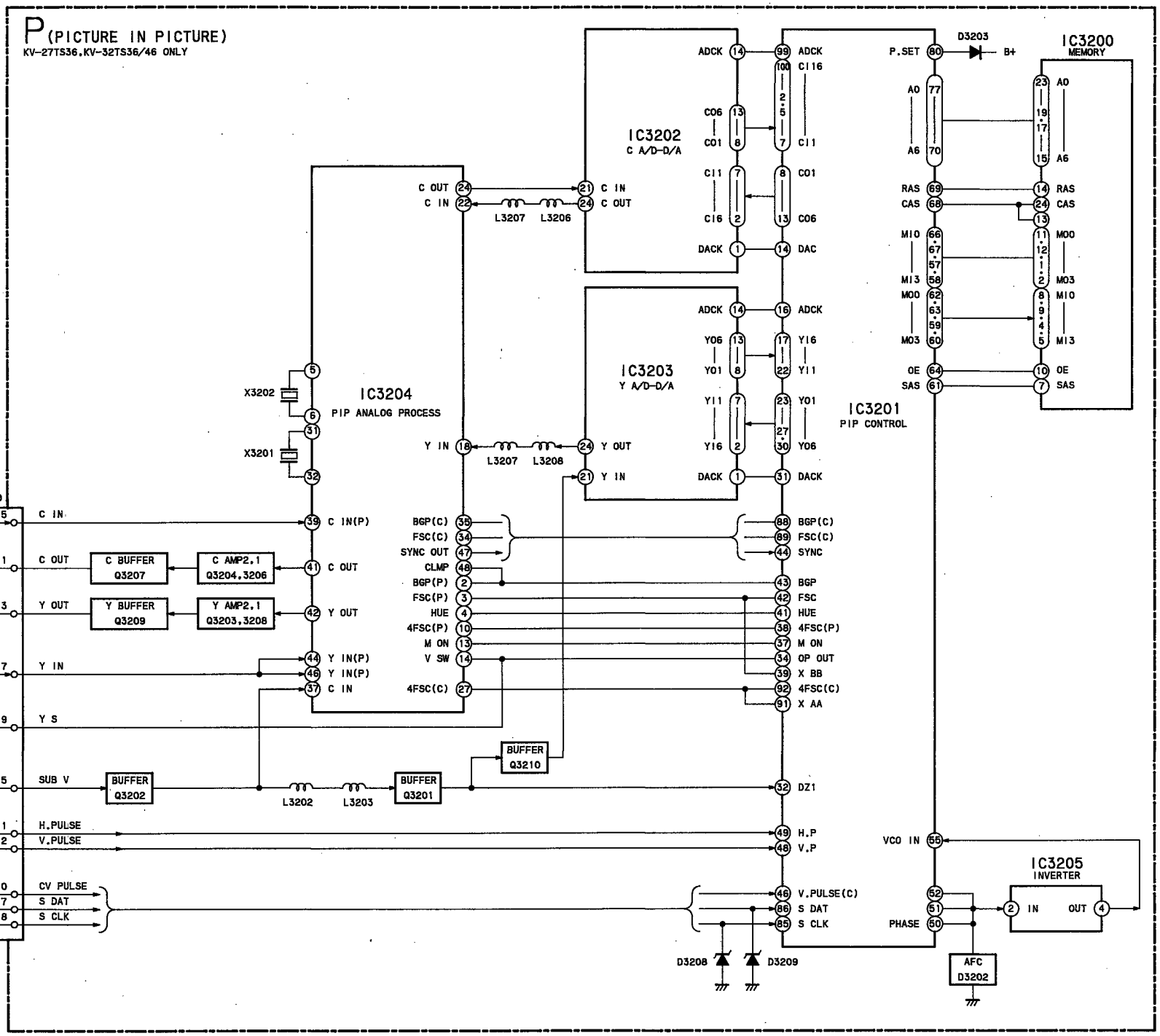


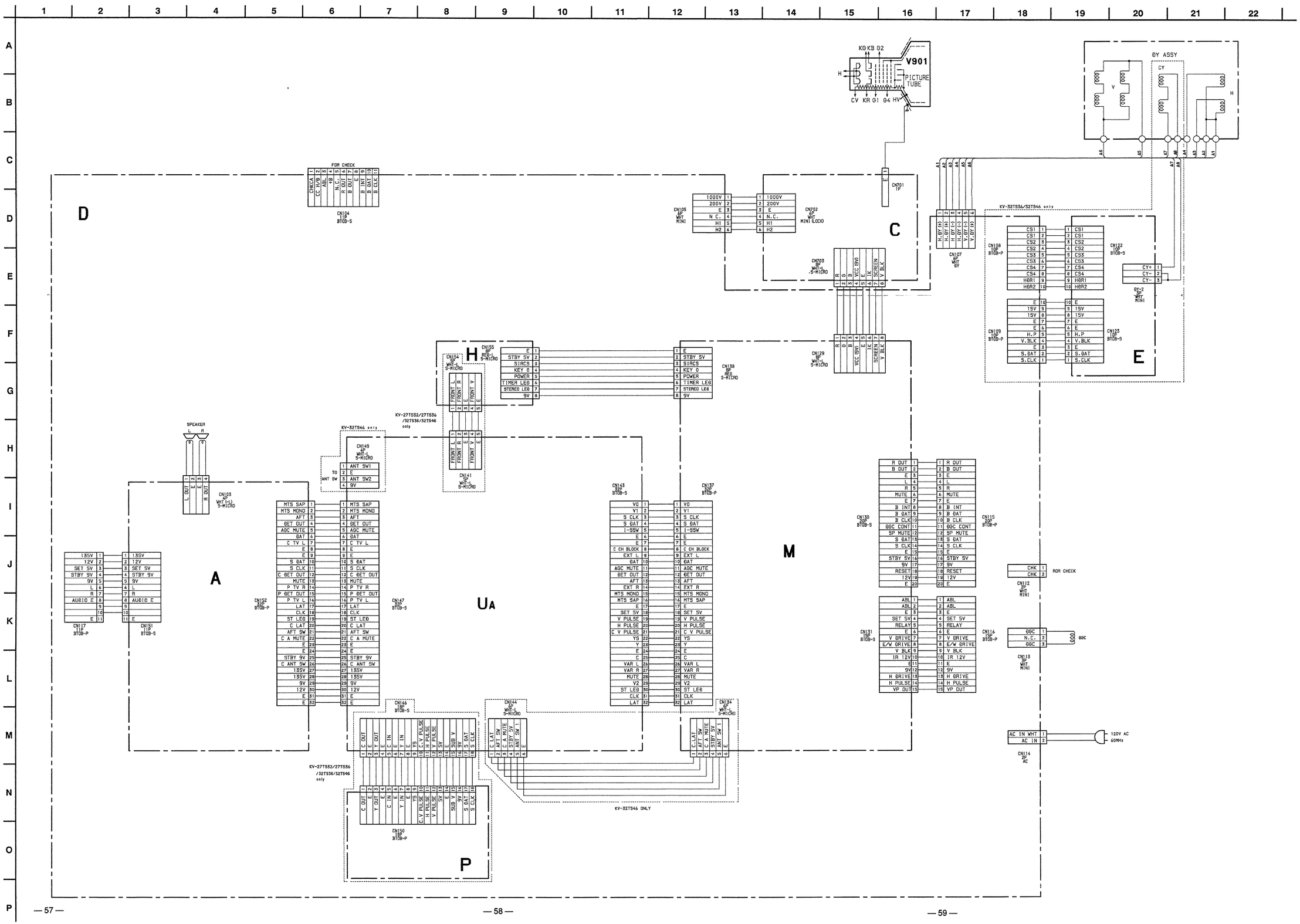




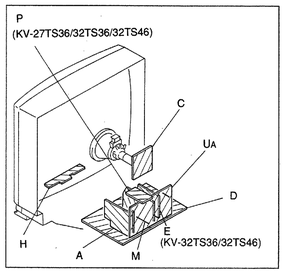

KV32TS36
KV32TS46
ONLY
CN108
HDR 2
HDR 1
CS2
CS2
CS1
CS1
CS4
CS4
CS3
CS3
+B
CN107
DY (1/2)
H.DY(+)
H.DY(+)
H.DY(-)
H.DY(-)
V.DY(-)
V.DY(+)
S501
D511
S502
D510
T503
PMT
HLC
PIN OUT
Q503,D509
-15V
-15V RECT
D504
PROT RECT
D504
T501
FBT
CN105
H2
H1
TO PICTURE TUBE
TO C BOARD
ABL
+15V
+15V RECT
D502
+200V
+200V RECT
D505
+1000V
+1000V RECT
D501
T604 PIT
D615-618
15V RECT
D612
8V RECT
D613
D608-611
AUDIO +B
AUDIO E
IC610
SOFT START
D637
IC602
STBY5V/RESET
OUTPUT
INPUT
RESET
STBY5V
IC601
CONTROL
SOFT START
Q605,D633-635
SOFT START
Q603,D607
D627
POWER CONTROL
Q613
D614
VOLT SHIFT
D623
STOPPER
E (DYNAMIC CONVERGEN
KV-32TS36/46 ONLY
CN123
S.DAT
S.CLK
H.P
V.BLK
D1509
D1508
BUFFER
Q1501
VCC RECT
D1516
LIMITER
D1510


P (PICTURE IN PICT
KV-27TS36,KV-32TS36/46 ONLY
NAMIC CONVERGENCE)
36/46 ONLY
IC501
DYNAMIC CONV
SDA
SCL
H IN
V IN
VCC
REF
H.STAT
H.TILT
PARA2
PARA1
TEMP COMP D1515
H.STAT DRIV2,1 Q1506,1519
H.STAT OUT Q1508
CNT CLAMP D1504,1503
CONV.REG1,2 Q1507,1509
+9V
CONV DRIVE Q1503
CLIP D1501
CONV OUT D1502
L1502
CLAMP SW Q1511
LIMITER D505-507
IC506
F.B OP AMP
Y.BOW OUT Q1502
C BOW OUT Q1514
L1504
Y RESET Q1520
PEAK RECT D1513
D1517
BUFFER Q1501
VCC RECT D1516
LIMITER D1510
1509
1508
IC502
+15V
+9V REG
+9V
CY+
CY-
DY (2/2)
CY
CN150
C IN
C OUT
C BUFFER Q3207
Y OUT
Y BUFFER Q3209
Y IN
Y S
SUB V
BUFFER Q3202
H.PULSE
V.PULSE
CV PULSE
S DAT
S CLK
A


P (PICTURE IN PICTURE)
KV-27TS36,KV-32TS36/46 ONLY
IC3202
C A/D-D/A
IC3203
Y A/D-D/A
IC3204
PIP ANALOG PROCESS
IC3201
PIP CONTROL
IC3200
MEMORY
IC3205
INVERTER
D3203
C OUT
C IN
L3207
L3206
Y IN
Y OUT
L3208
X3202
X3201
ADCK
DACK
DAC
CO6
CO1
CI1
CI6
YO6
YO1
YI1
YI6
P.SET
B+
RAS
CAS
MIO
MI3
MOO
MO3
OE
SAS
N150
C IN
C OUT
C BUFFER Q3207
C AMP2.1 Q3204,3206
Y OUT
Y BUFFER Q3209
Y AMP2.1 Q3203,3208
Y IN
Y S
SUB V
BUFFER Q3202
L3202
L3203
BUFFER Q3201
BUFFER Q3210
H.PULSE
V.PULSE
CV PULSE
S DAT
S CLK
BGP(C)
FSC(C)
SYNC OUT
CLMP
BGP(P)
FSC(P)
HUE
4FSC(P)
M ON
V SW
4FSC(C)
SYNC
BGP
FSC
OP OUT
X BB
X AA
DZ1
H.P
V.P
V.PULSE(C)
VCO IN
PHASE
AFC D3202
D3208
D3209


D
C
H
E
A
UA
M
P
V901
PICTURE TUBE
KG KB G2
CV KR G1 G4 HV
BY ASSY
CY
V
H
FOR CHECK
CN104 1P BTOB-S
CN105 6P WHT MINI
CN702 6P WHT MINI LOCO
CN751 1P
CN703 8P WHT-L S-MICRO
CN107 6P WHT BY
CN108 10P BTOB-P
CN122 10P BTOB-S
CN109 10P BTOB-P
CN123 10P BTOB-S
CY-2 3P WHT MINI
KV-32TS36/32TS46 only
CN155 8P WHT-L S-MICRO
CN154 8P WHT-L S-MICRO
CN138 8P RED S-MICRO
CN129 8P WHT-L S-MICRO
KV-27TS32/27TS36 /32TS36/32TS46 only
CN141 5P WHT-L S-MICRO
KV-32TS46 only
CN149 4P WHT-L S-MICRO
SPEAKER
CN103 4P WHT(-L) S-MICRO
CN117 11P BTOB-P
CN151 11P BTOB-S
CN152 32P BTOB-P
CN147 32P BTOB-S
CN143 32P BTOB-S
CN137 32P BTOB-P
CN130 20P BTOB-S
CN115 20P BTOB-P
CN131 16P BTOB-S
CN116 16P BTOB-P
CN112 2P WHT MINI
CN113 3P WHT MINI
CN114 2P AC
120V AC 60MHz
CN146 18P BTOB-S
CN144 4P WHT-L S-MICRO
CN124 6P WHT-L S-MICRO
CN134 6P WHT-L S-MICRO
KV-27TS32/27TS36 /32TS36/32TS46 only
KV-32TS46 ONLY
CN150 18P BTOB-P

6-3. CIRCUIT BOARDS LOCATION



6-4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note:

- All capacitors are in µF unless otherwise noted.
  pF: µµF 50WV or less are not indicated except for electrolytic and tantalums.
- All electrolytics are in 50V unless otherwise specified.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5 mm
Rating electrical power 1/4W

- Chips resistors are 1/10W.
- All resistors are in ohms.
  kΩ=1000Ω, MΩ=1000kΩ
- : nonflammable resistor.
- : fusible resistor.
- △: internal component.
- : panel designation, and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : earth-ground. (cool)
- : earth-chassis. (hot)
- The components identified by ◪ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation.
  Should replacement be required, replace only with the value originally used.
- When replacing components identified by ◪, make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by ◪ and repeat the adjustment until the specified value is achieved.
  (Refer to R511 and R524 on page 41, 42)
- When replacing the part in below table be sure to parform the related adjustment.

Part replaced (◪)		Adjustment (◧)
PM501, R511, R632, R645, R650, R338	D BOARD / M BOARD	HOLD-DOWN (R511)
IC601, PM501, D504, C598, R509, R524, R632, R635, R645, T501, R338	D BOARD / M BOARD	HOLD-DOWN (R524)

- All voltages are in V.
- Voltage are dc with respect to ground unless otherwise noted.
- Readings are taken with a 10 MΩ digital multimeter.
- Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal production tolerance.
- Circled numbers are waveform references.
- : B+ line.
- : B– line.
- : signal path.

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RW	NONFLAMMABLE WIREWOUND
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: ※	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note: The symbol ⇔ display is on the component side.

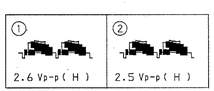
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

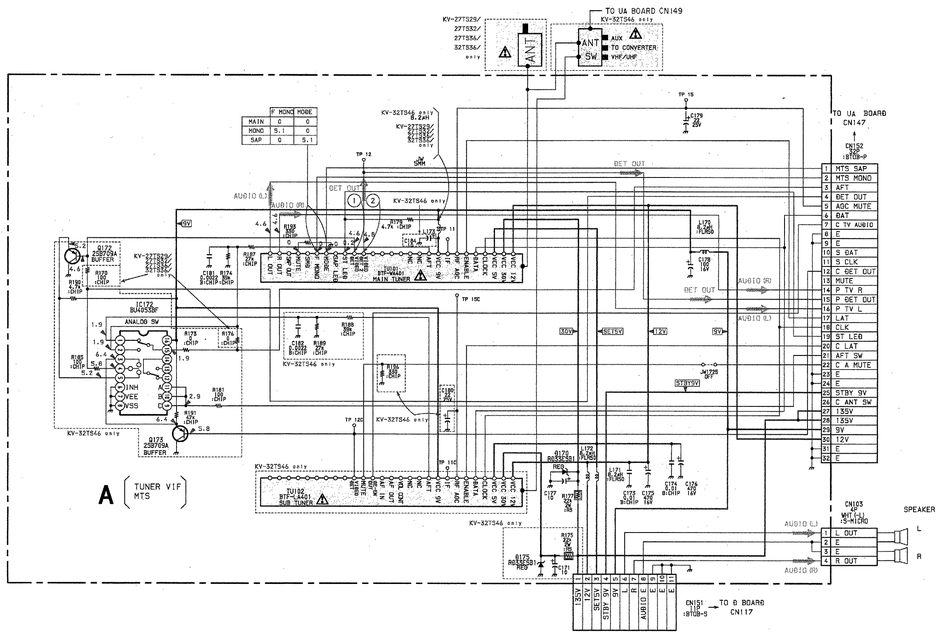
The symbol ⇔ indicate fast operating fuse. Replace only with fuse of same rating as marked.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

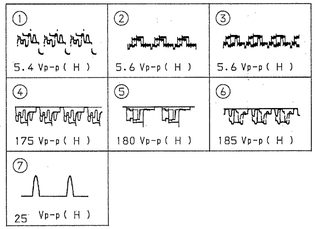
Le symbole ⇔ indique une fusible a action rapide. Doit etre remplacee par une fusible de meme yaleur, comme maque.

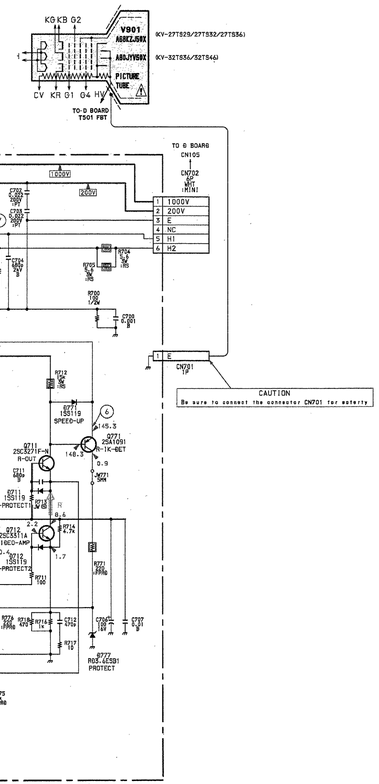
— A Board —





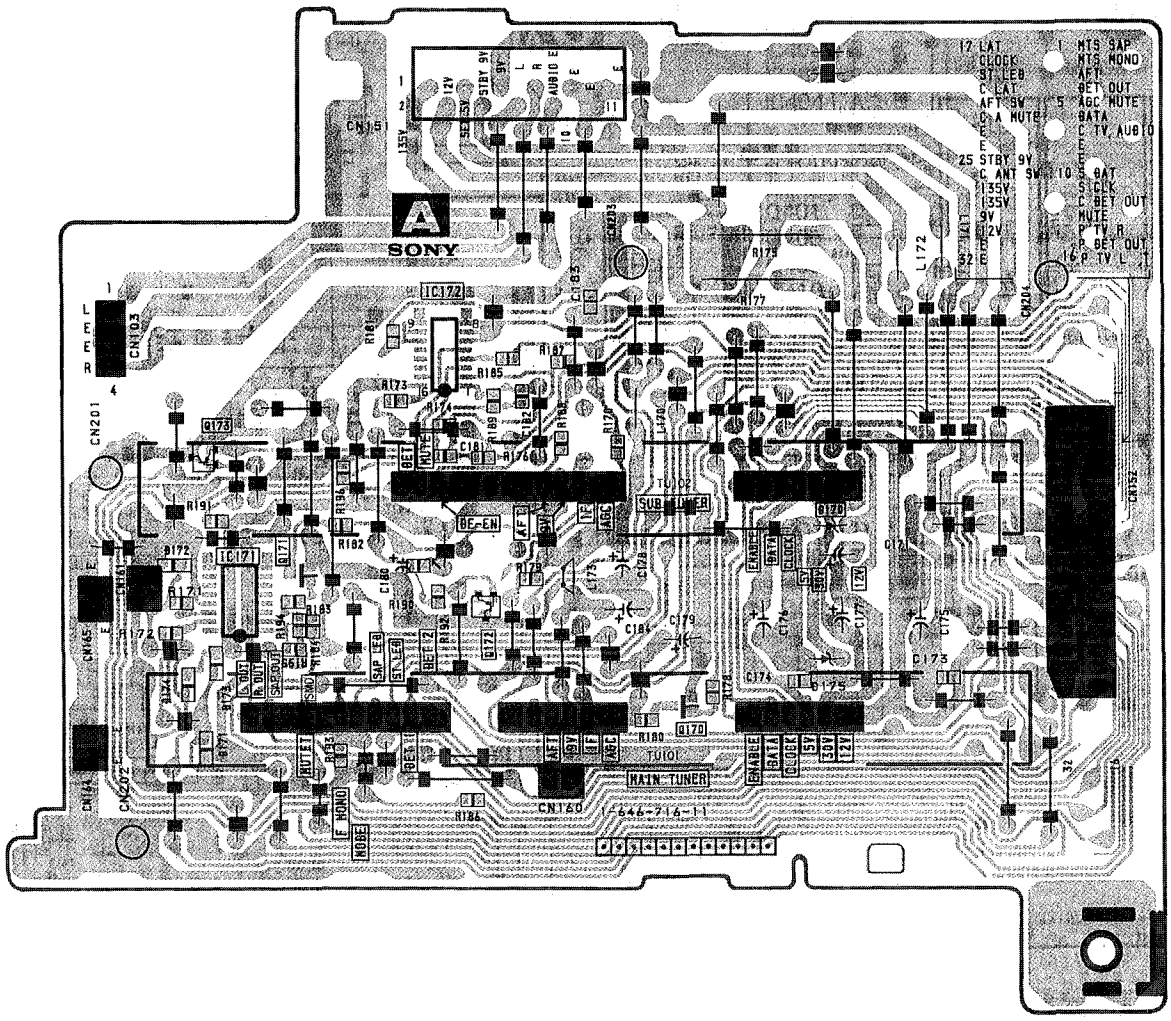
— C Board —





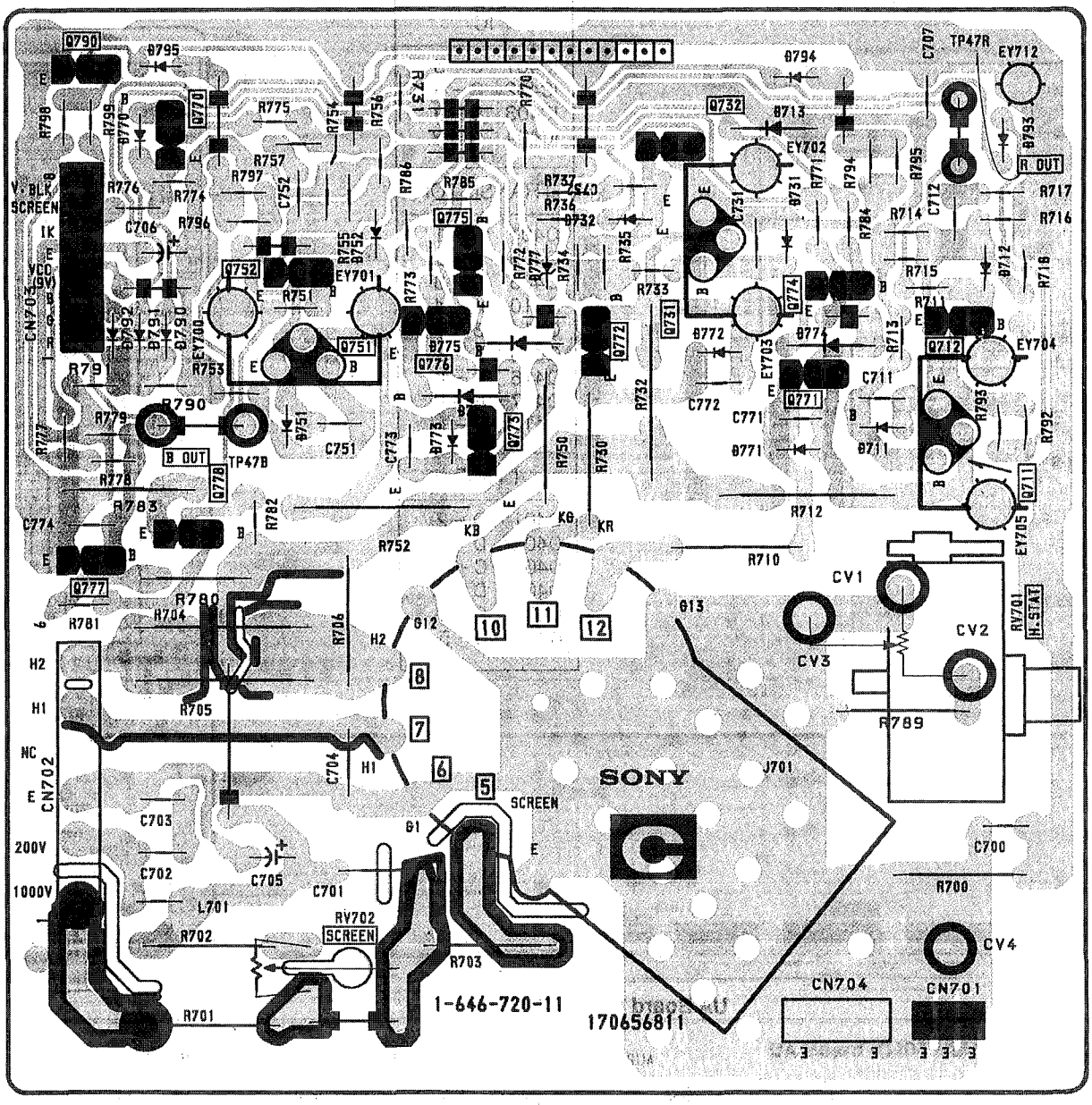
A [TUNER, VIF, MTS]

— A Board —



C [R.G.B. OUT]

— C Board —



NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

KV-27TS29/27TS32/27TS36
RM-Y116 RM-Y117 RM-Y118
KV-32TS36/32TS46
RM-Y118 RM-Y118
SA-W200

UA [AV SW, A/V INPUT, AV OUTPUT]

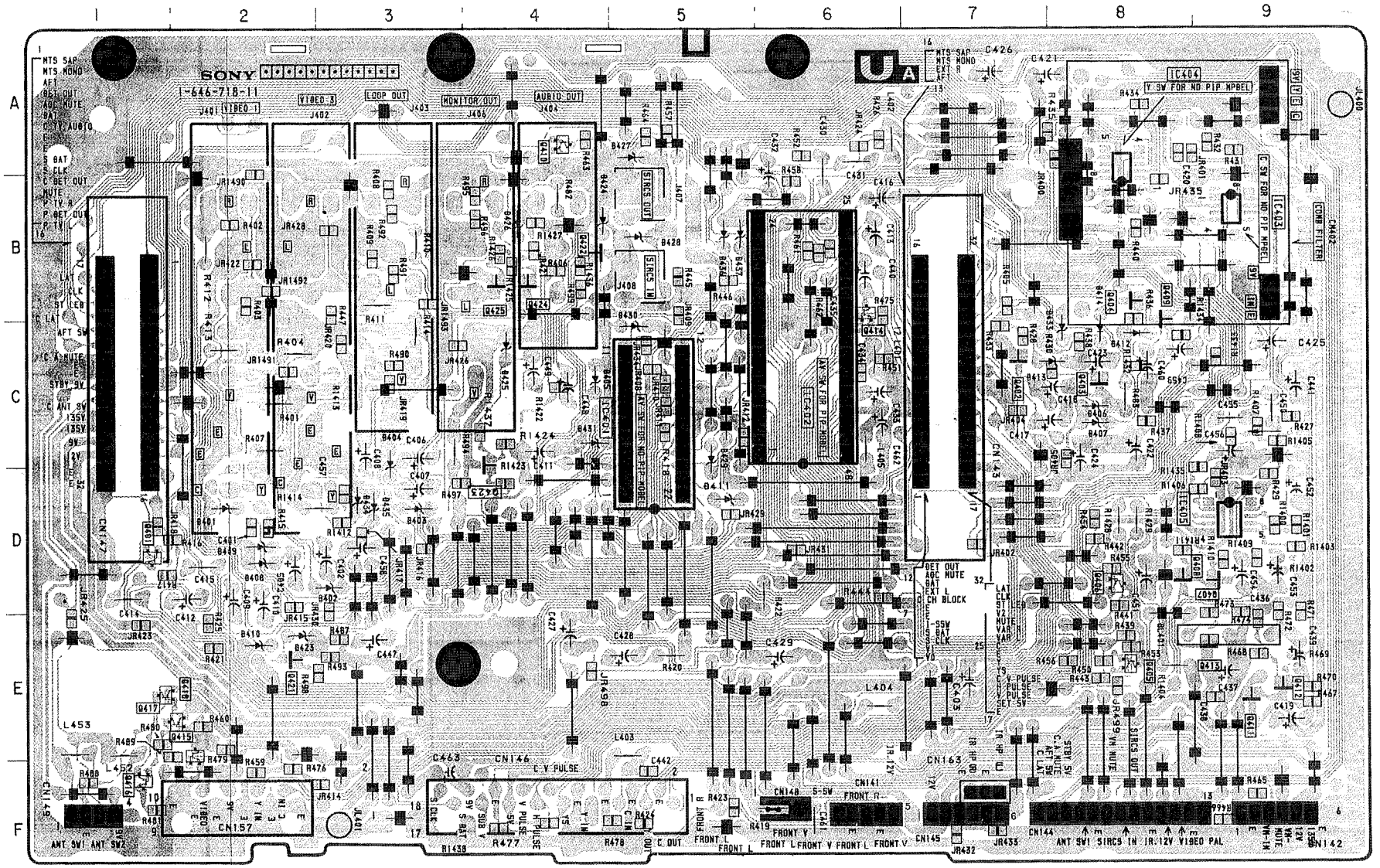
— UA Board —

IC	
IC401	C – 5
IC402	C – 6
IC403	B – 9
IC404	A – 8

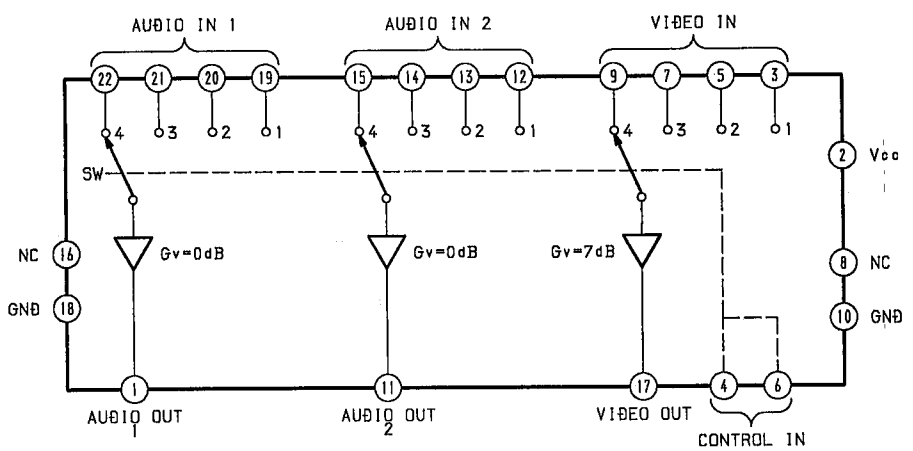
TRANSISTOR	
Q401	D – 1
Q405	E – 8
Q406	D – 8
Q410	A – 4
Q414	B – 6
Q415	E – 2
Q416	F – 1
Q417	E – 1
Q418	E – 1

DIODE	
D401	D – 2
D402	D – 3
D405	C – 4
D408	D – 2
D436	B – 5
D437	B – 5

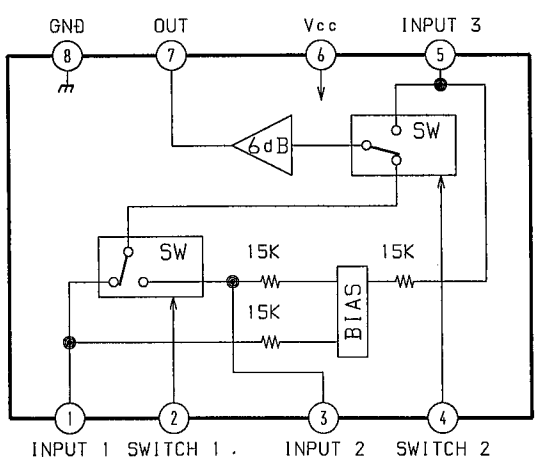
— UA Board —



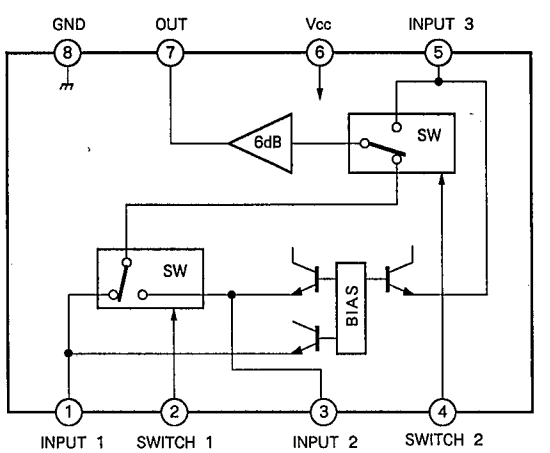
UA Board IC401 M5470AP



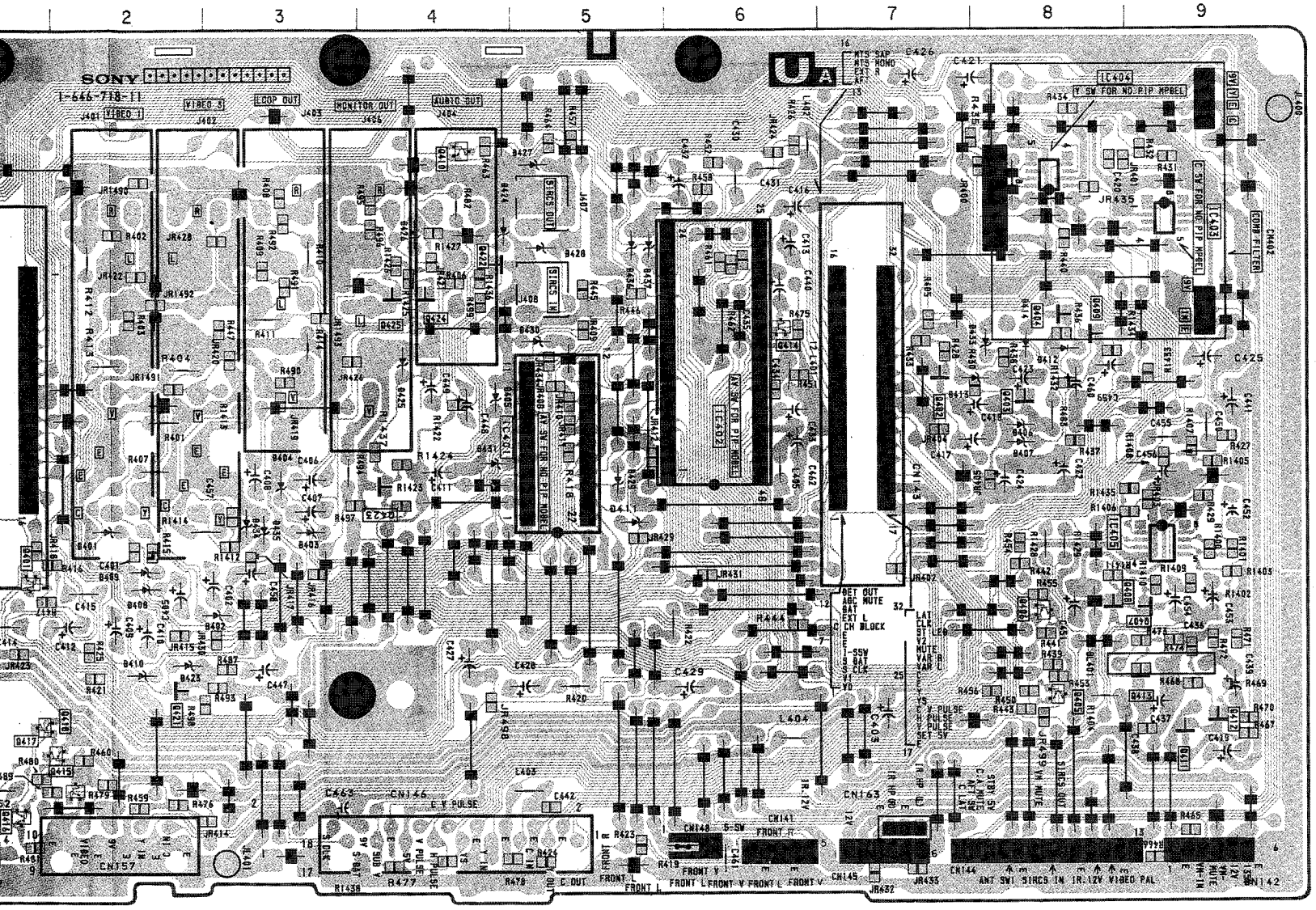
UA Board IC403 MM1114XFF



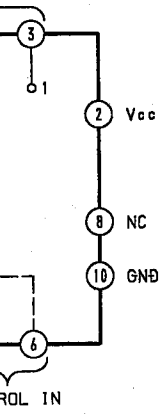
UA Board IC404 MM1118XFF

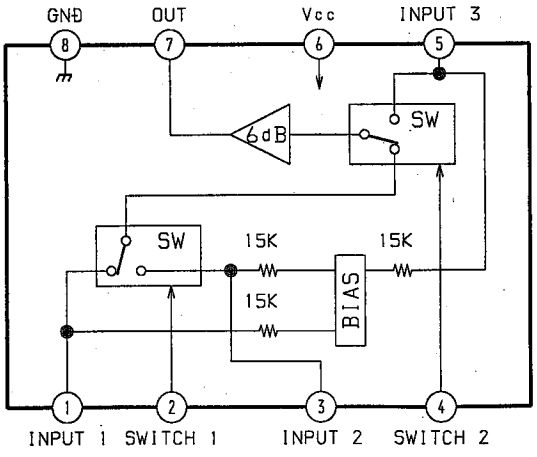


V, A/V INPUT, AV OUTPUT]

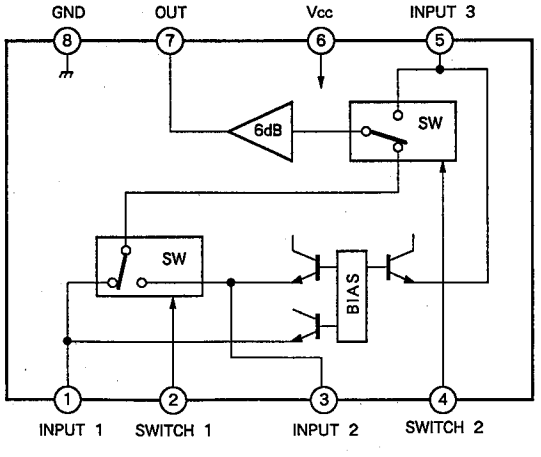


UA Board IC403 MM1114XFF

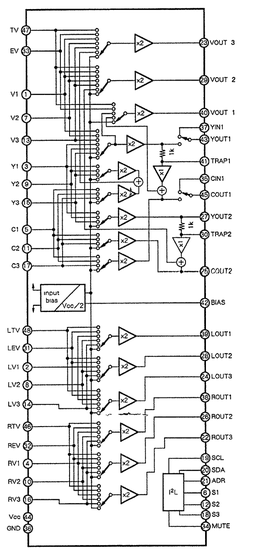




UA Board IC404 MM1118XFF

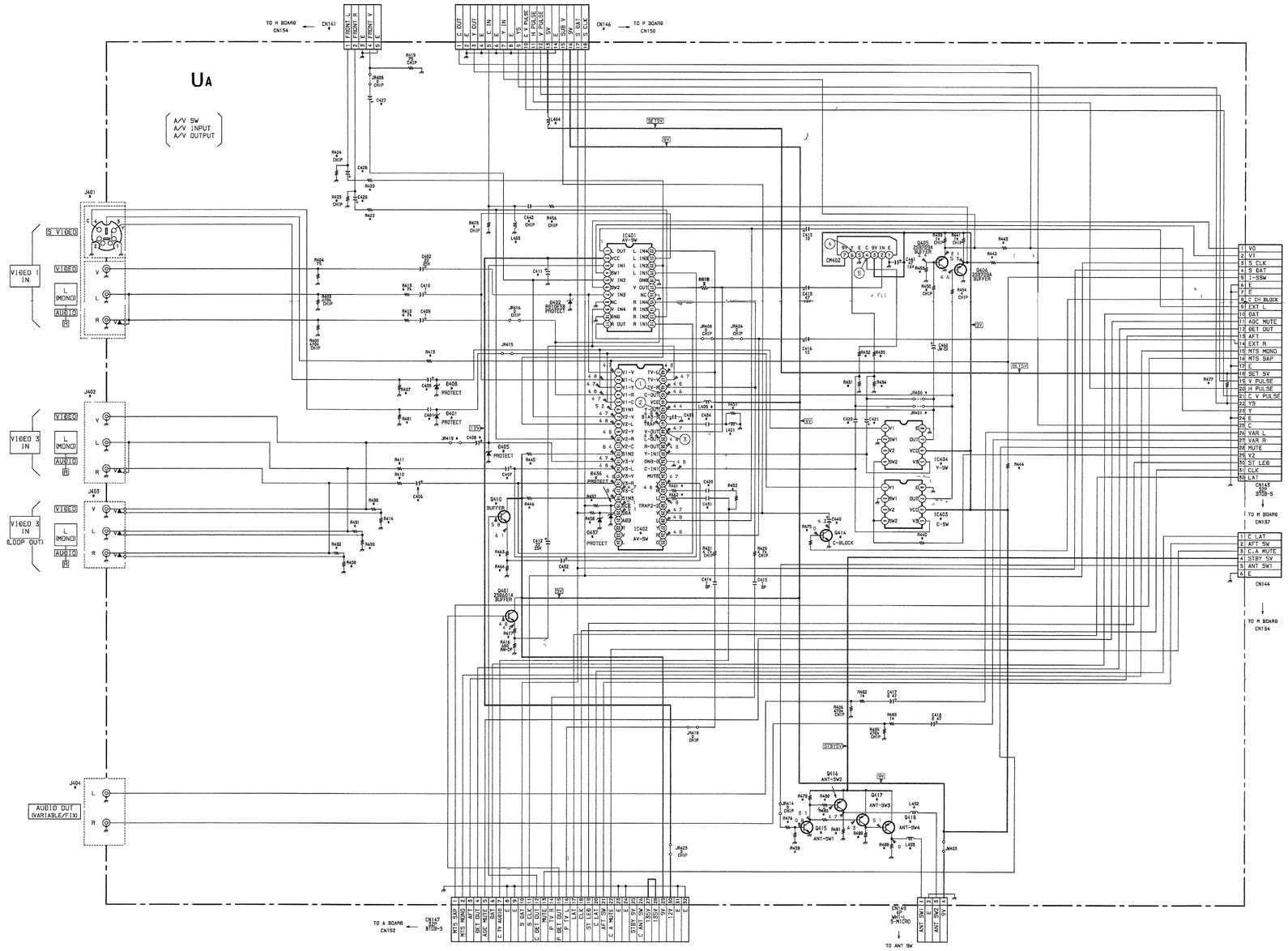


UA Board IC402 CXA1545AS



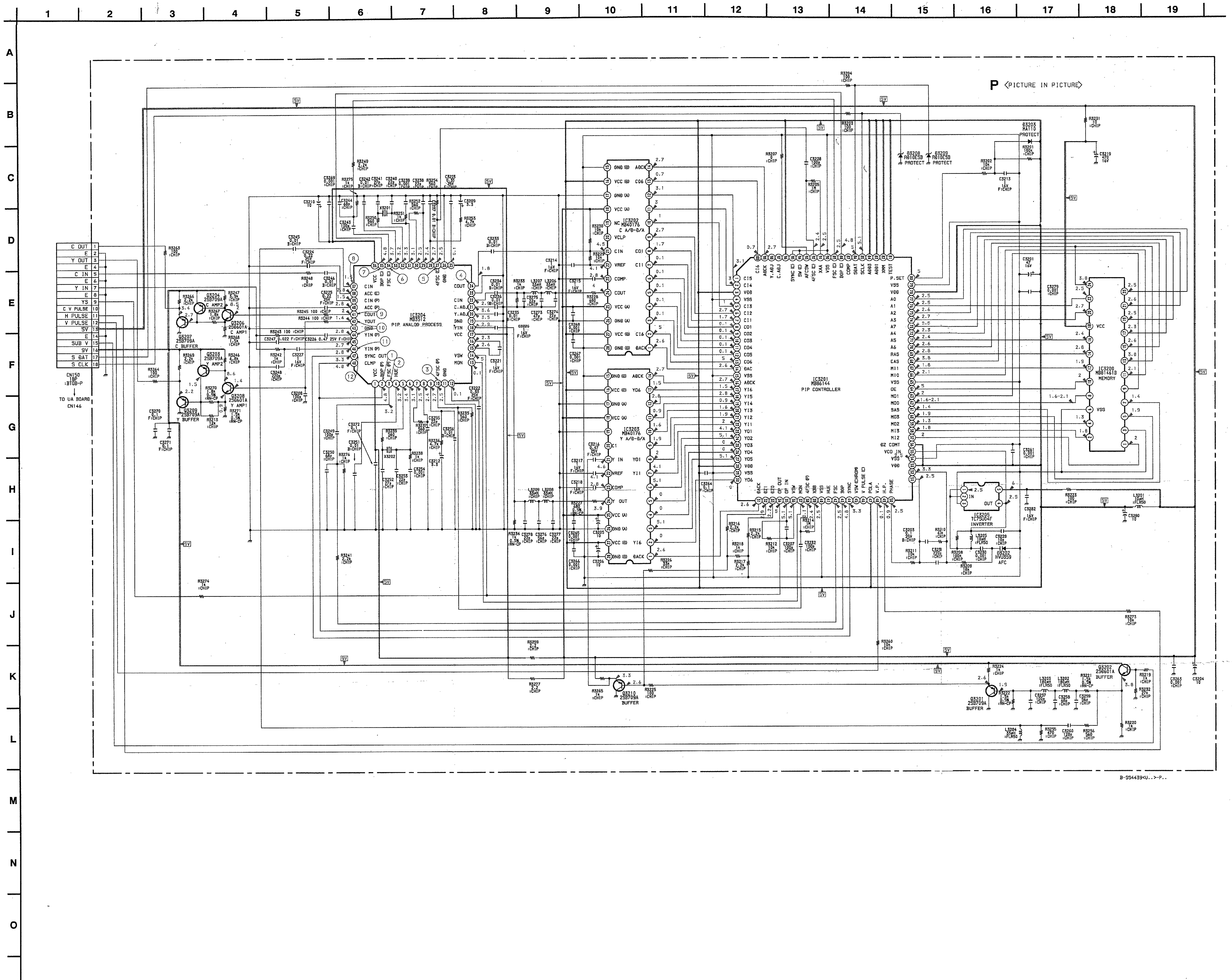
— UA Board —

① 2.2 Vp-p (H)	② 2.3 Vp-p (H)	③ 2.6 Vp-p (H)
④ 2.4 Vp-p (H)	⑤ 2.6 Vp-p (H)	



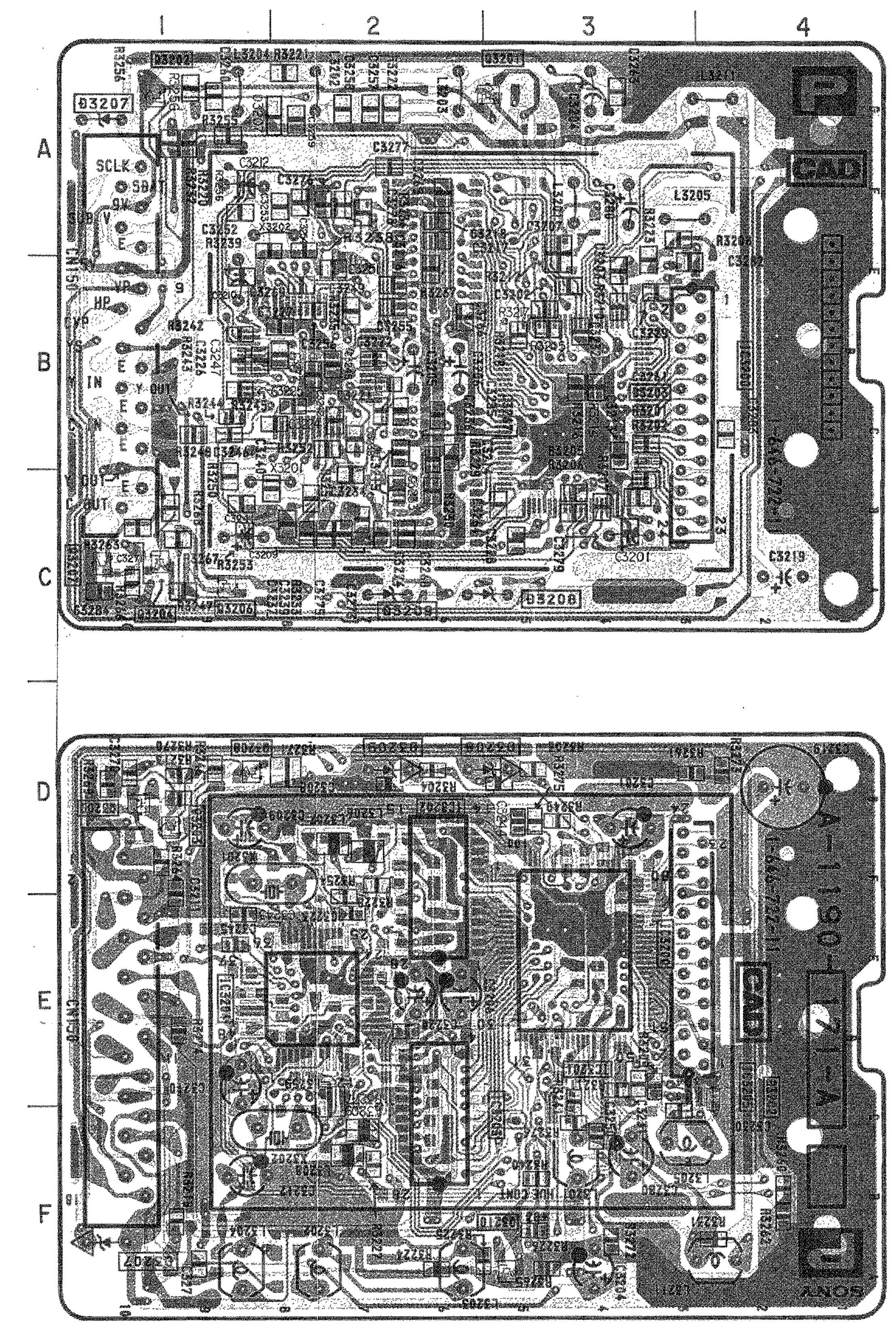
— UA Board —

	KV-32TS46	KV-27TS36 KV-32TS36	KV-32TS32	KV-27TS29
C401	0.01 F CHIP	0.01 F CHIP	0.01 F CHIP	-
C405	22 25V	22 25V	22 25V	-
C406	1	1	1	-
C407	1	1	1	-
C408	22 25V	22 25V	22 25V	-
C411	-	-	100 25V	100 25V
C420	0.01 F CHIP	0.01 F CHIP	0.01 F CHIP	-
C421	22 25V	22 25V	0.47	-
C427	JW (5)	JW (5)	JW (5)	-
C428	JW (5)	JW (5)	JW (5)	-
C429	JW (5)	JW (5)	JW (5)	-
C430	1	-	-	-
C431	1	-	-	-
C432	22 25V	-	-	-
C433	33 25V	33 25V	-	-
C434	100P CHIP	100P CHIP	-	-
C440	10	10	-	-
C442	100P CHIP	100P CHIP	-	-
CN141	5P WHT-L S-MICRO	5P WHT-L S-MICRO	6P WHT-L S-MICRO	-
CN144	6P WHT-L S-MICRO	-	-	-
CN148	18P B10B-S	18P B10B-S	-	-
CN149	6P WHT-L S-MICRO	-	-	-
D401	RD10ESB	RD10ESB	RD10ESB	-
D405	RD10ESB	RD10ESB	RD10ESB	-
D408	RD10ESB	RD10ESB	RD10ESB	-
D436	RD10ESB	RD10ESB	-	-
D437	RD10ESB	RD10ESB	-	-
IC401	-	-	M52470AP	M52470AP
IC402	CXA1545AS	CXA1545AS	-	-
IC403	-	-	MM1114XFF	-
IC404	-	-	MM1118XFF	-
J401	S TERMINAL BLOCK	S TERMINAL BLOCK	S TERMINAL BLOCK	PIN JACK BLOCK
J402	PIN JACK BLOCK	PIN JACK BLOCK	PIN JACK BLOCK	-
J403	-	-	PIN JACK BLOCK	-
JR400	-	-	-	0 CHIP
JR401	-	-	-	0 CHIP
JR415	0 CHIP	0 CHIP	0 CHIP	-
JR419	0 CHIP	0 CHIP	0 CHIP	-
JR603	10M	-	-	-
L401	18uH FLR50	18uH FLR50	-	-
L403	33uH FLR50	33uH FLR50	-	-
L404	JW (5)	JW (5)	-	-
L405	JW (5)	JW (5)	-	-
L452	JW (5)	-	-	-
L453	JW (5)	-	-	-
Q410	2SD601A	-	-	-
Q414	2SD601A	2SD601A	-	-
Q415	2SD601A	-	-	-
Q416	2SB709A	-	-	-
Q417	2SB709A	-	-	-
Q418	2SB709A	-	-	-
R401	75 CHIP	75 CHIP	75 CHIP	-
R407	75 CHIP	75 CHIP	75 CHIP	-
R408	470K CHIP	470K CHIP	470K CHIP	-
R409	470K CHIP	470K CHIP	470K CHIP	-
R410	4 7K	4 7K	4 7K	-
R411	4 7K	4 7K	4 7K	-
R414	75 CHIP	75 CHIP	75 CHIP	-
R415	4 7K CHIP	4 7K CHIP	4 7K CHIP	-
R417	560 RN-CP	560 RN-CP	470 RN-CP	470 RN-CP
R418	-	-	100 CHIP	100 CHIP
R420	JW (5)	JW (5)	JW (5)	-
R422	JW (5)	JW (5)	JW (5)	-
R431	1K CHIP	1K CHIP	680 CHIP	1K CHIP
R432	0 CHIP	0 CHIP	680 CHIP	0 CHIP
R434	1K CHIP	1K CHIP	680 CHIP	1K CHIP
R435	0 CHIP	0 CHIP	680 CHIP	0 CHIP
R440	-	-	100 CHIP	-
R442	-	-	100 CHIP	100 CHIP
R443	-	-	100 CHIP	100 CHIP
R444	82K CHIP	82K CHIP	82K CHIP	-
R445	10K CHIP	10K CHIP	-	-
R446	10K CHIP	10K CHIP	-	-
R450	470 CHIP	470 CHIP	100 CHIP	100 CHIP
R451	4 7K CHIP	4 7K CHIP	-	-
R452	100 CHIP	-	-	-
R453	-	-	820 RN-CP	820 RN-CP
R454	0 CHIP	0 CHIP	100 CHIP	100 CHIP
R456	470 CHIP	470 CHIP	-	-
R457	220 CHIP	220 CHIP	-	-
R458	220 CHIP	220 CHIP	-	-
R459	22K CHIP	-	-	-
R460	330 CHIP	-	-	-
R461	4 7K CHIP	-	-	-
R462	4 7K CHIP	-	-	-
R463	680 CHIP	-	-	-
R464	680 CHIP	-	-	-
R475	1K CHIP	1K CHIP	-	-
R476	22K CHIP	-	-	-
R477	-	-	1K CHIP	1K CHIP
R478	470 CHIP	470 CHIP	-	-
R479	22K CHIP	-	-	-
R480	22K CHIP	-	-	-
R481	22K CHIP	-	-	-
R488	22K CHIP	-	-	-
R489	22K CHIP	-	-	-
R490	0 CHIP	0 CHIP	-	-
R491	0 CHIP	0 CHIP	-	-
R492	0 CHIP	0 CHIP	-	-


P <PICTURE IN PICTURE>
IC3204 MB3512 PIP ANALOG PROCESS
IC3201 MB86144 PIP CONTROLLER
IC3202 MB40176 C A/D-D/A
IC3203 MB40176 Y A/D-D/A
IC3200 MB81461B MEMORY
IC3205 TC7SU04F INVERTER
CN150 18P :BTOB-P
TO UA BOARD CN146
C OUT
Y OUT
C IN
Y IN
YS
C V PULSE
H PULSE
V PULSE
5V
SUB V
9V
S DAT
S CLK
Q3201 2SB709A BUFFER
Q3202 2SD601A BUFFER
Q3203 2SB709A Y AMP2
Q3204 2SB709A C AMP2
Q3206 2SD601A C AMP1
Q3207 2SB709A C BUFFER
Q3208 2SD601A Y AMP1
Q3209 2SB709A Y BUFFER
Q3210 2SB709A BUFFER
D3202 HVU359 AFC
D3203 MA110 PROTECT
D3208 RD10ESB PROTECT
D3209 RD10ESB PROTECT
B-SS4439<U..>-P..

P [PICTURE IN PICTURE

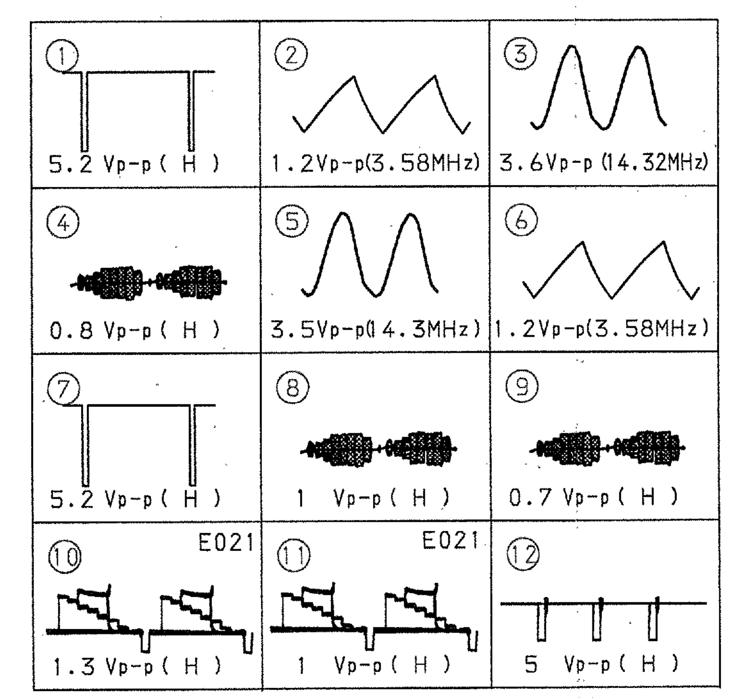
— P Board —



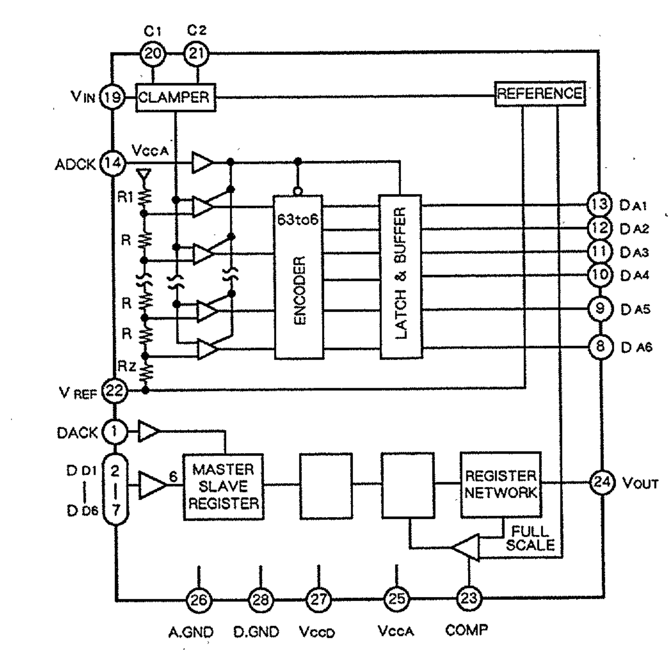
— P Board —

IC	
IC3200	B – 4
IC3201	E – 3
IC3202	D – 2
IC3203	F – 2
IC3204	E – 2
IC3205	E – 3
TRANSISTOR	
Q3201	A – 3
Q3202	A – 1
Q3203	D – 1
Q3204	C – 1
Q3206	C – 1
Q3207	C – 1
Q3208	D – 1
Q3209	D – 1
Q3210	F – 3
DIODE	
D3202	E – 4
D3203	B – 3
D3208	C – 3
D3209	C – 2

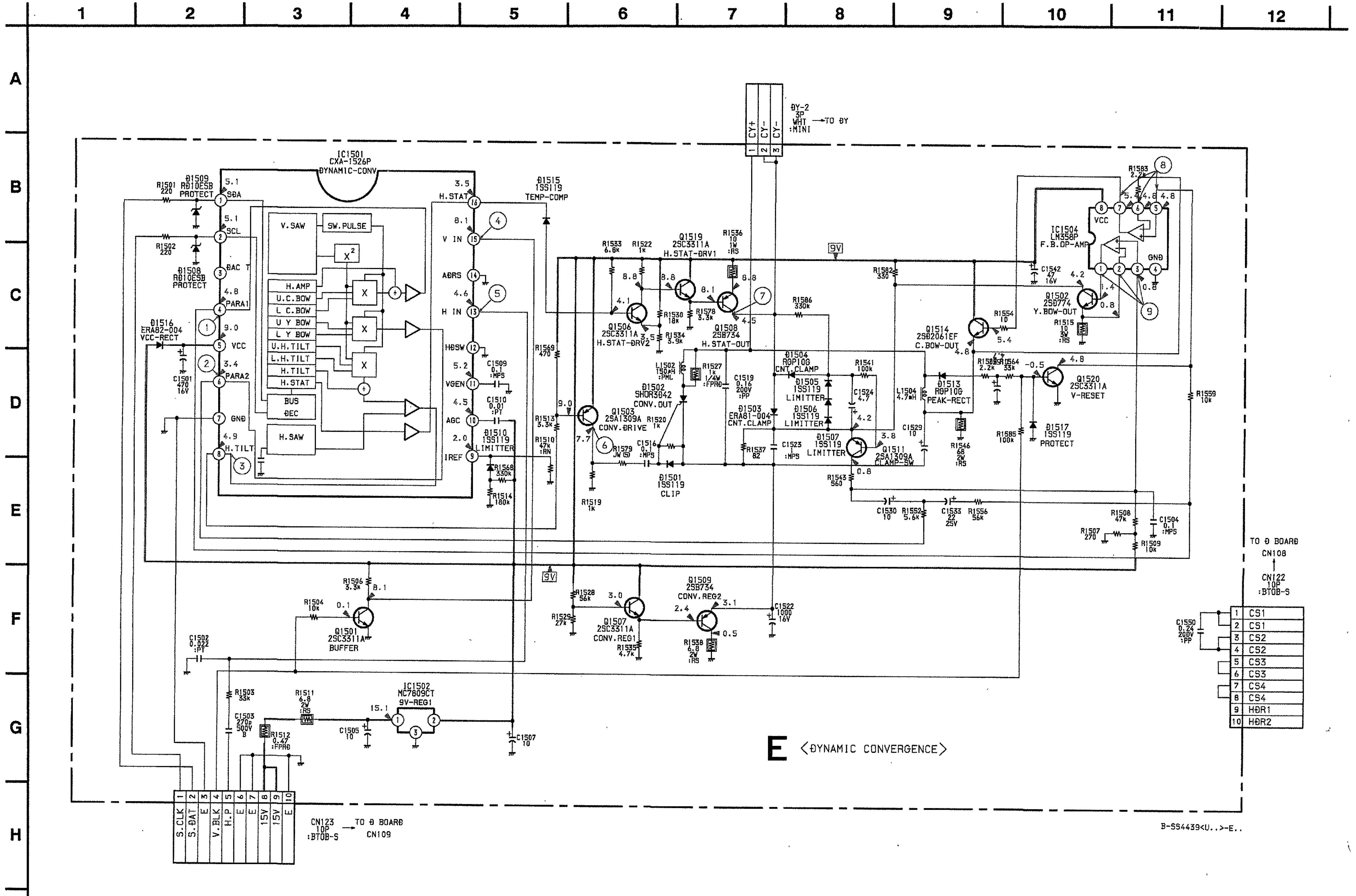
— P Board —



P Board IC3202, IC3203 MB40176

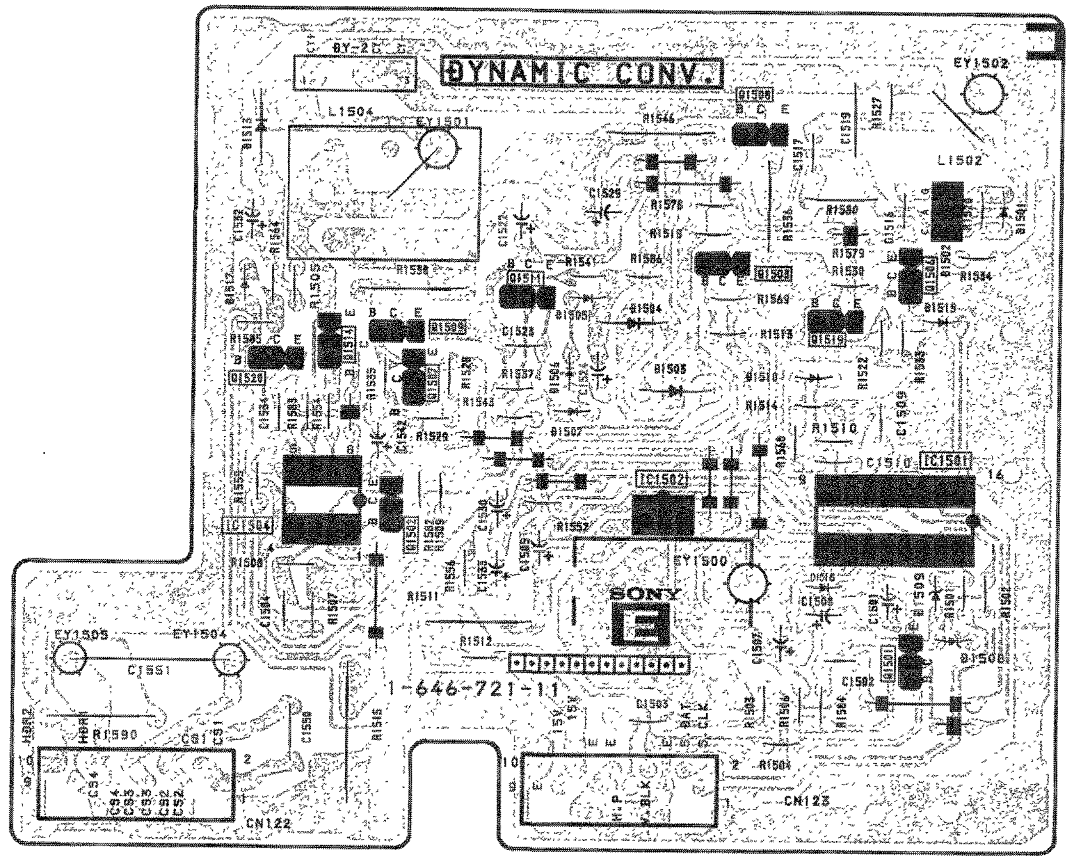


KV-27TS29/27TS32/27TS36 RM-Y116 RM-Y117 RM-Y118
KV-32TS36/32TS46 RM-Y118 RM-Y118 SA-W200

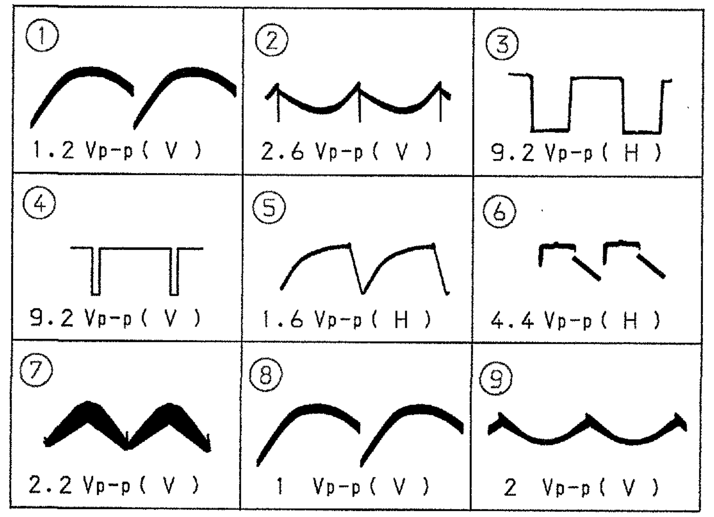

IC1501 CXA-1526P DYNAMIC-CONV
IC1502 MC7809CT 9V-REG1
IC1504 LM358P F.B.OP-AMP
Q1501 2SC3311A BUFFER
Q1502 2SD774 Y.BOW-OUT
Q1503 2SA1309A CONV.DRIVE
Q1506 2SC3311A H.STAT-DRV2
Q1507 2SC3311A CONV.REG1
Q1508 2SB734 H.STAT-OUT
Q1509 2SB734 CONV.REG2
Q1511 2SA1309A CLAMP-SW
Q1514 2SD2061EF C.BOW-OUT
Q1519 2SC3311A H.STAT-DRV1
Q1520 2SC3311A V-RESET
DY-2 3P WHT :MINI → TO DY
CN122 10P :BTOB-S → CN108 TO D BOARD
CN123 10P :BTOB-S → TO D BOARD CN109
E <DYNAMIC CONVERGENCE>
B-SS4439<U..>-E..

E [DYNAMIC CONVERGENCE]

— E Board —



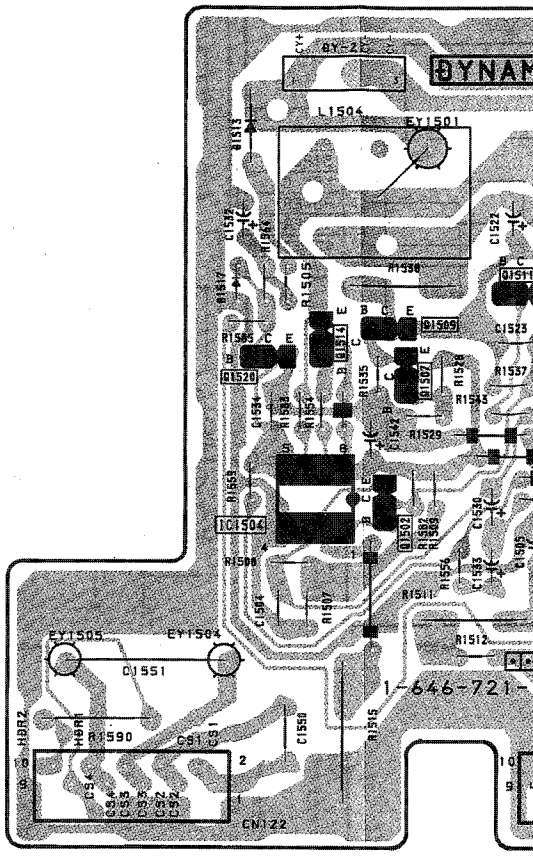
— E Board —

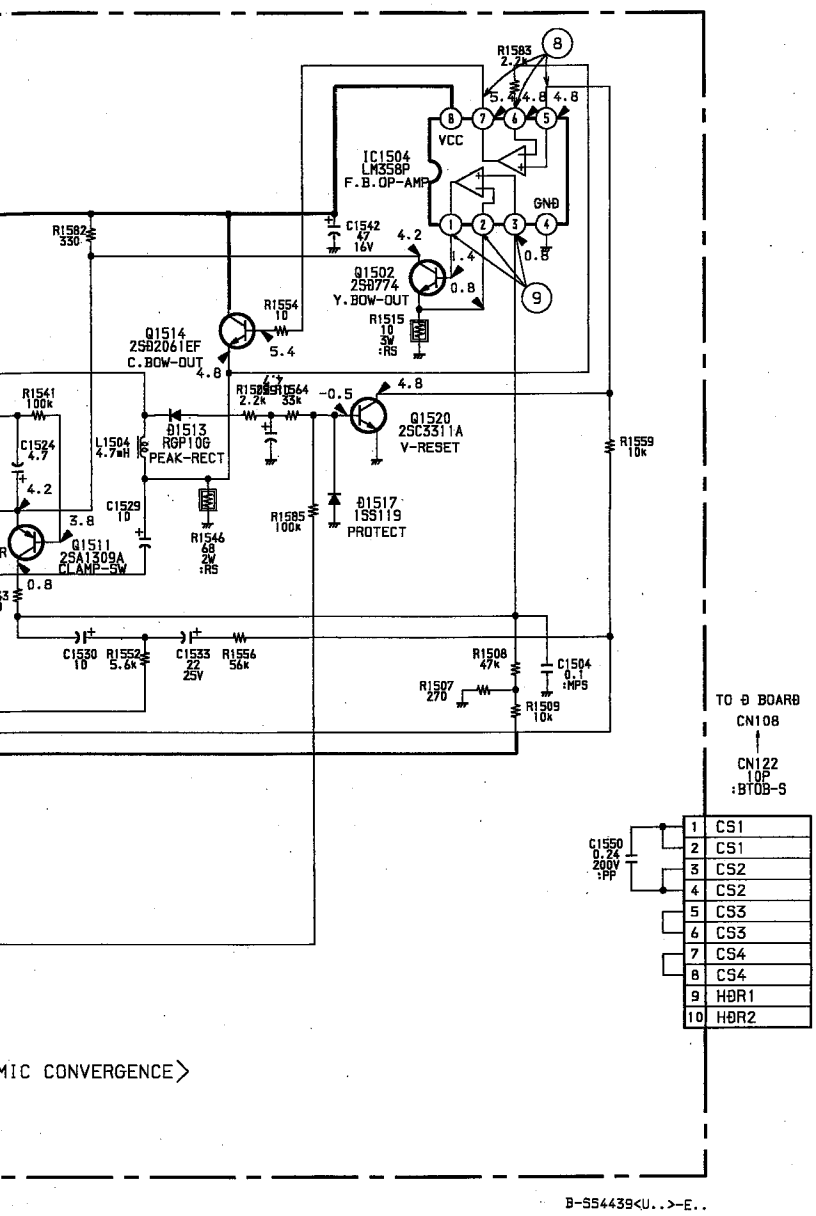


9 | 10 | 11 | 12

E [DYNAMIC CONVERGENCE]

— E Board —





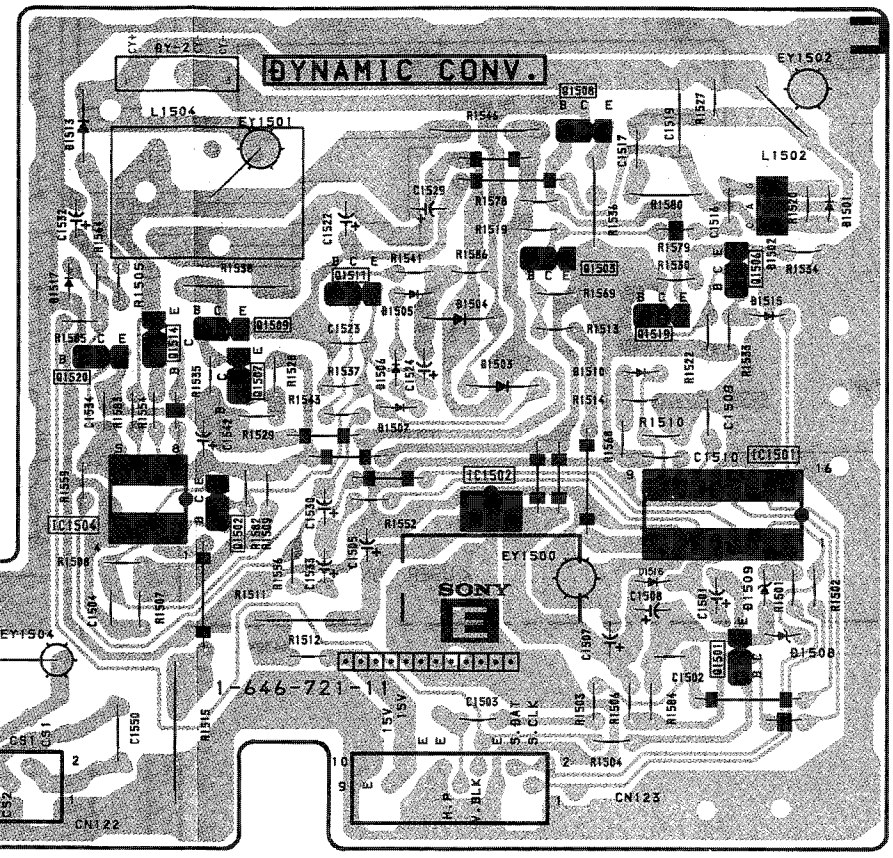
MIC CONVERGENCE〉

B-S54439<U..>-E..

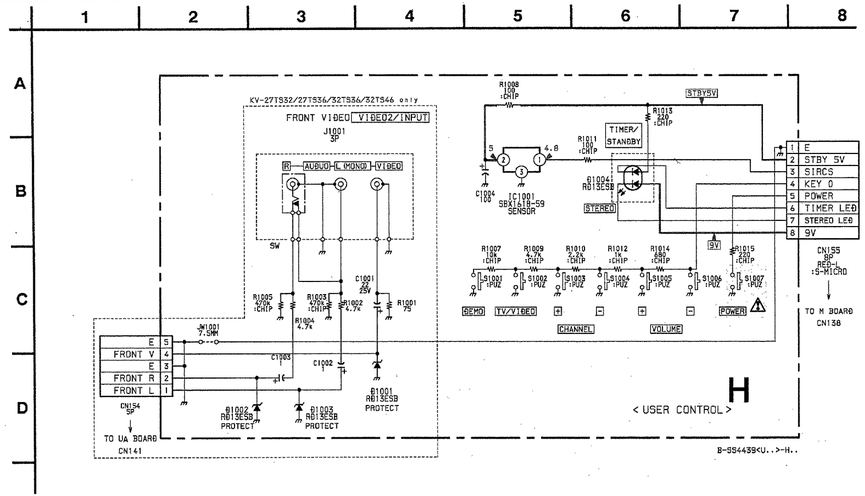
— E Board —

① 1.2 Vp-p (V)	② 2.6 Vp-p (V)	③ 9.2 Vp-p (H)
④ 9.2 Vp-p (V)	⑤ 1.6 Vp-p (H)	⑥ 4.4 Vp-p (H)
⑦ 2.2 Vp-p (V)	⑧ 1 Vp-p (V)	⑨ 2 Vp-p (V)

MIC CONVERGENCE]

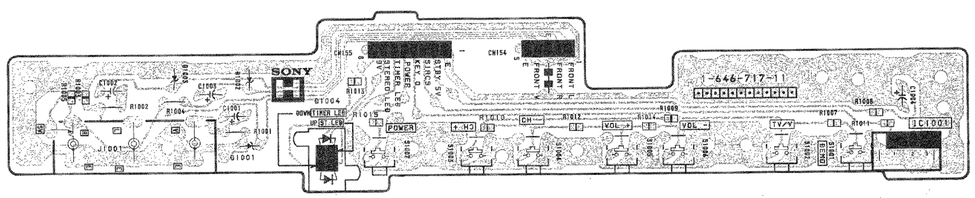


-p (V)	③ 9.2 Vp-p (H)
-p (H)	⑥ 4.4 Vp-p (H)
-p (V)	⑨ 2 Vp-p (V)



H [USER CONTROL]

— H Board —

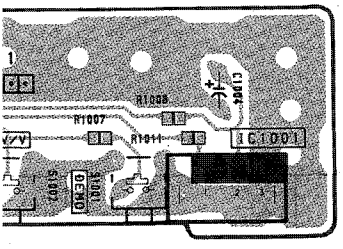


8

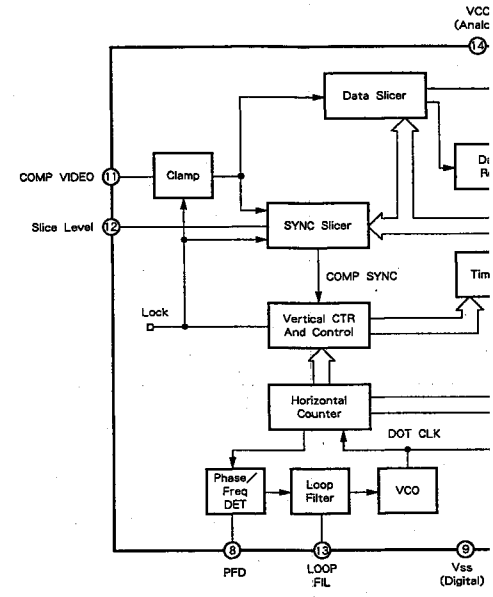
E
STBY 5V
SIRCS
KEY 0
POWER
TIMER LED
STEREO LED
9V

CN155
8P
RED-L
:S-MICRO

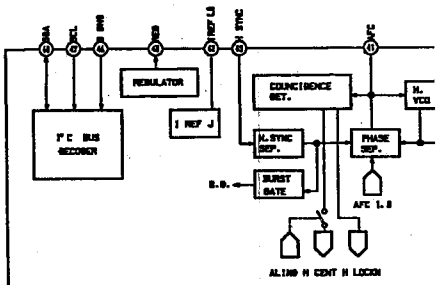
TO M BOARD
CN138

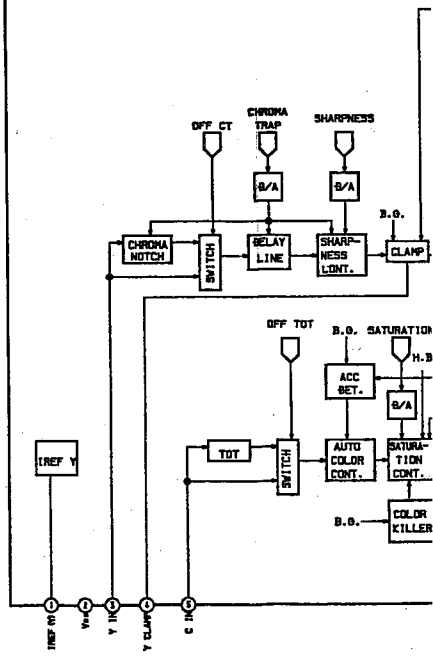


M Board IC150 MC144143

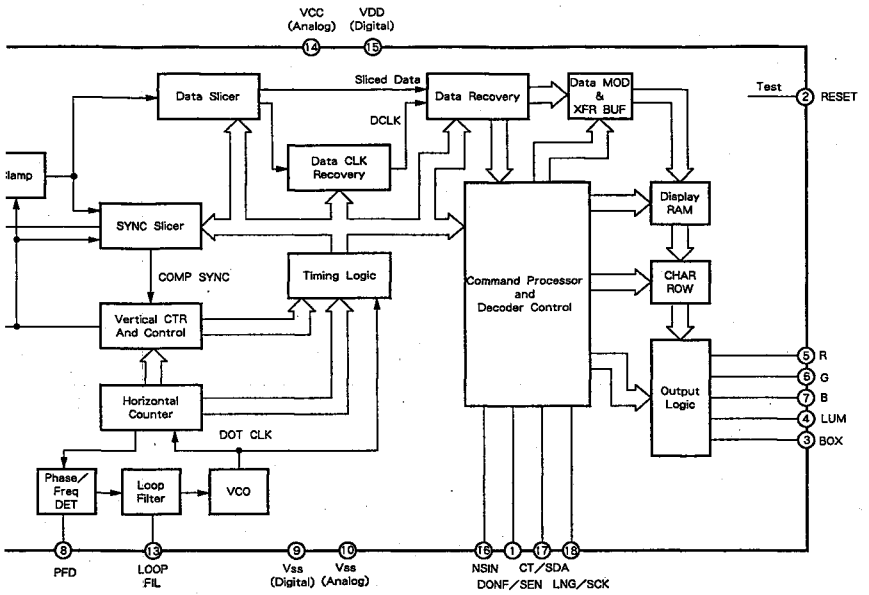


M Board IC301 CXA1465AS

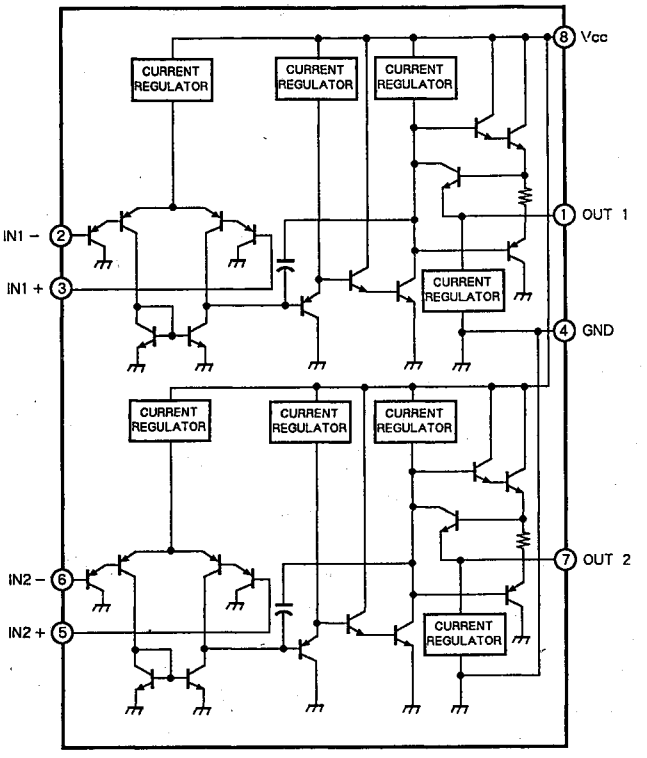




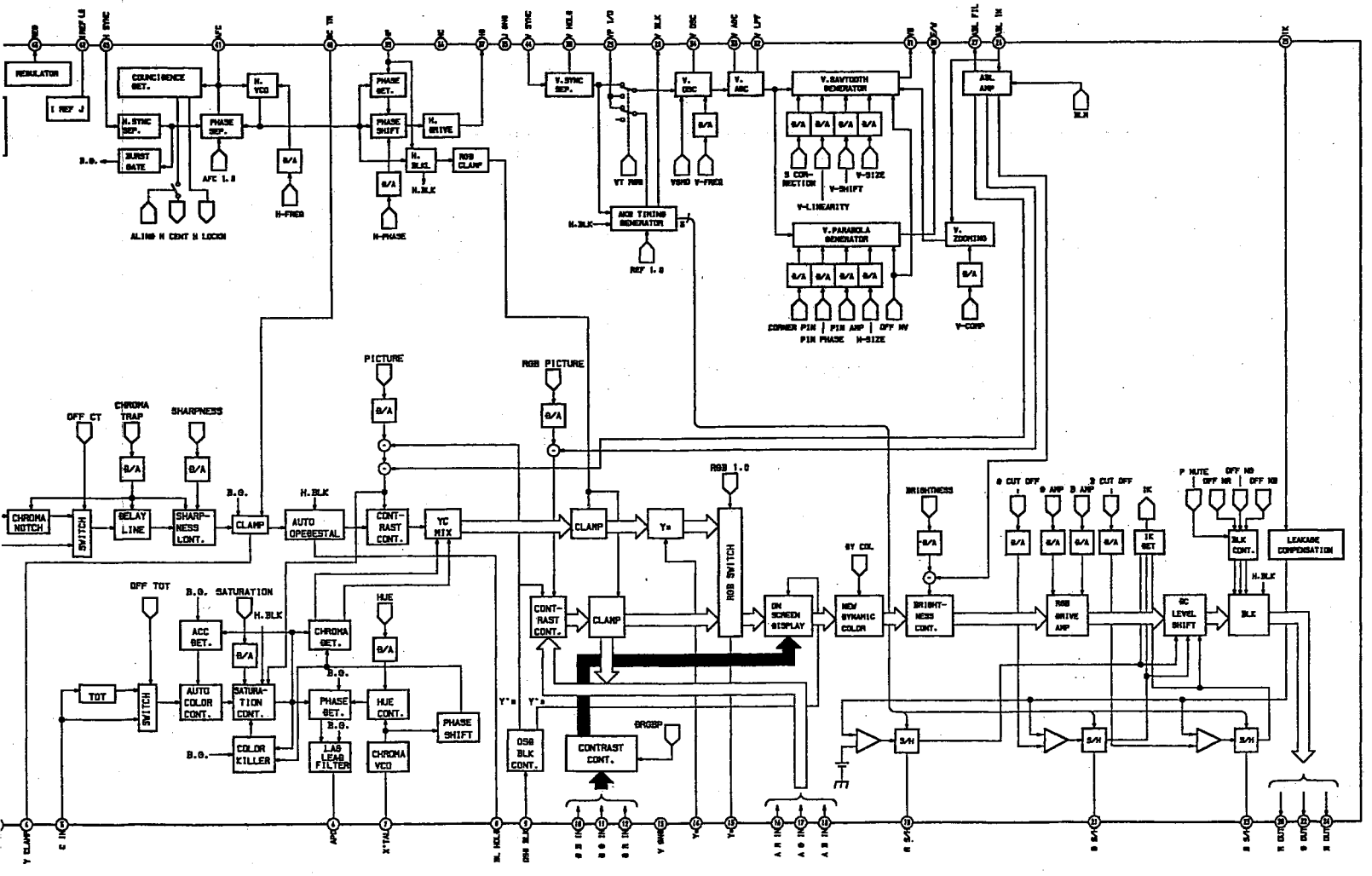
C144143



M Board IC202 LM358PS



IC301 CXA1465AS



— M Board —

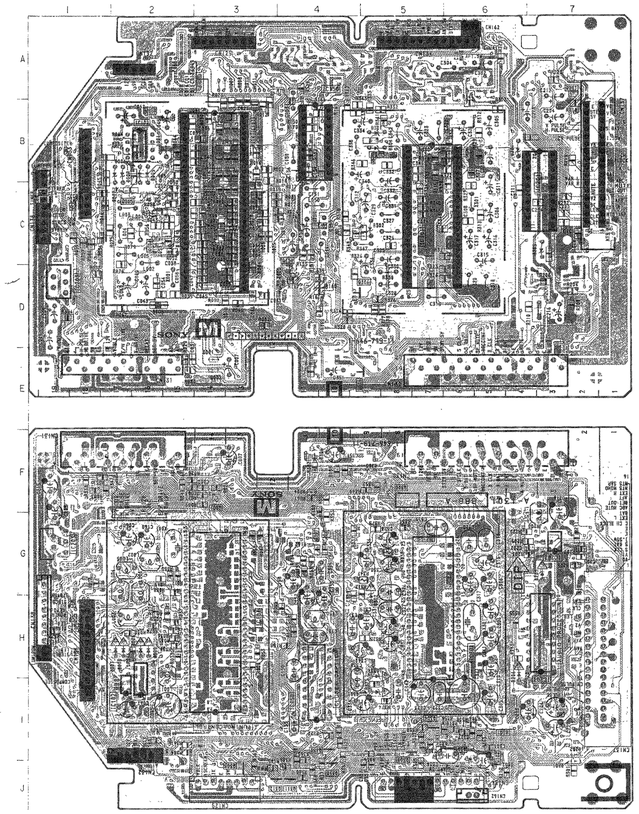
IC		DIODE	
IC101	C – 3	D001	E – 3
IC102	B – 2	D002	E – 3
IC150	B – 4	D004	F – 4
IC201	C – 7	D005	D – 2
IC202	G – 7	D006	B – 2
IC301	C – 5	D007	B – 2
		D008	B – 2
TRANSISTOR		D009	B – 2
		D150	C – 4
Q001	F – 3	D201	J – 7
Q002	D – 4	D202	I – 7
Q004	C – 2	D205	C – 7
Q005	C – 2	D206	B – 6
Q151	D – 4	D301	B – 5
Q201	A – 7	D304	B – 5
Q301	I – 6	D305	F – 5
Q302	I – 6	D306	F – 4
Q307	G – 4		
Q308	F – 5		
Q314	E – 4		

— M Board —

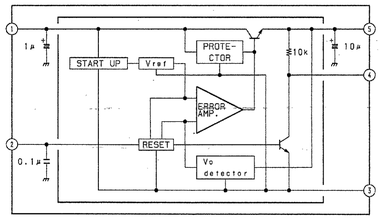
① E021 2.5 Vp-p (H)	② 1.3 Vp-p (H)	③ 5 Vp-p (H)
④ 4.8 Vp-p (H)	⑤ 4.8 Vp-p (H)	⑥ 1.6 Vp-p (H)
⑦ 1.6 Vp-p (H)	⑧ 5.6 Vp-p (H)	⑨ 4.4 Vp-p (H)
⑩ 1.8 Vp-p (V)	⑪ 1.4 Vp-p (V)	⑫ 2.5 Vp-p (V)
⑬ 5 Vp-p (V)	⑭ 5.3 Vp-p (4.17MHz)	

M Y/C/J, CONTROL, AUDIO CONTROL, CLOSED CAPTION

— M Board —

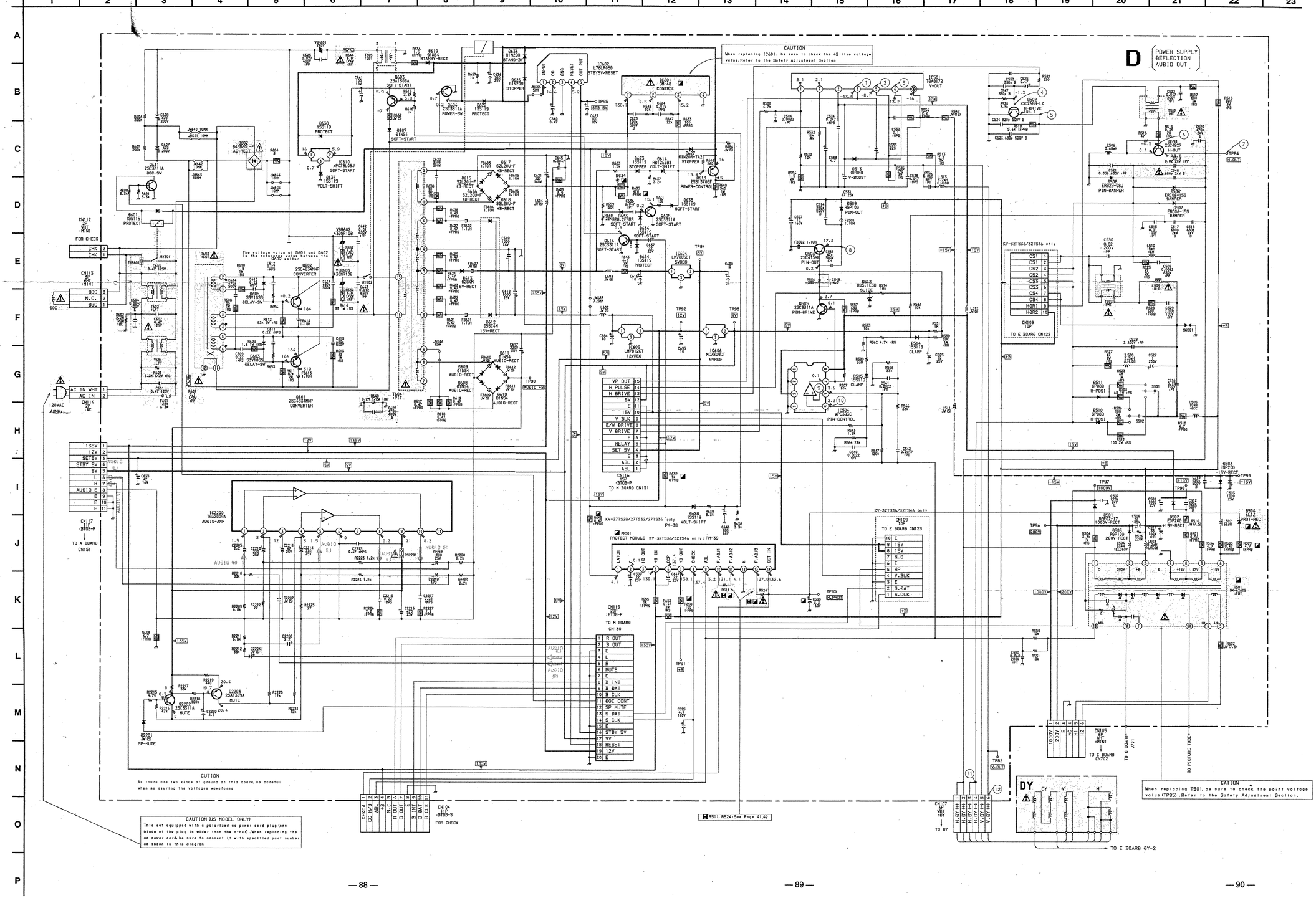


D Board IC602 L78LR05D



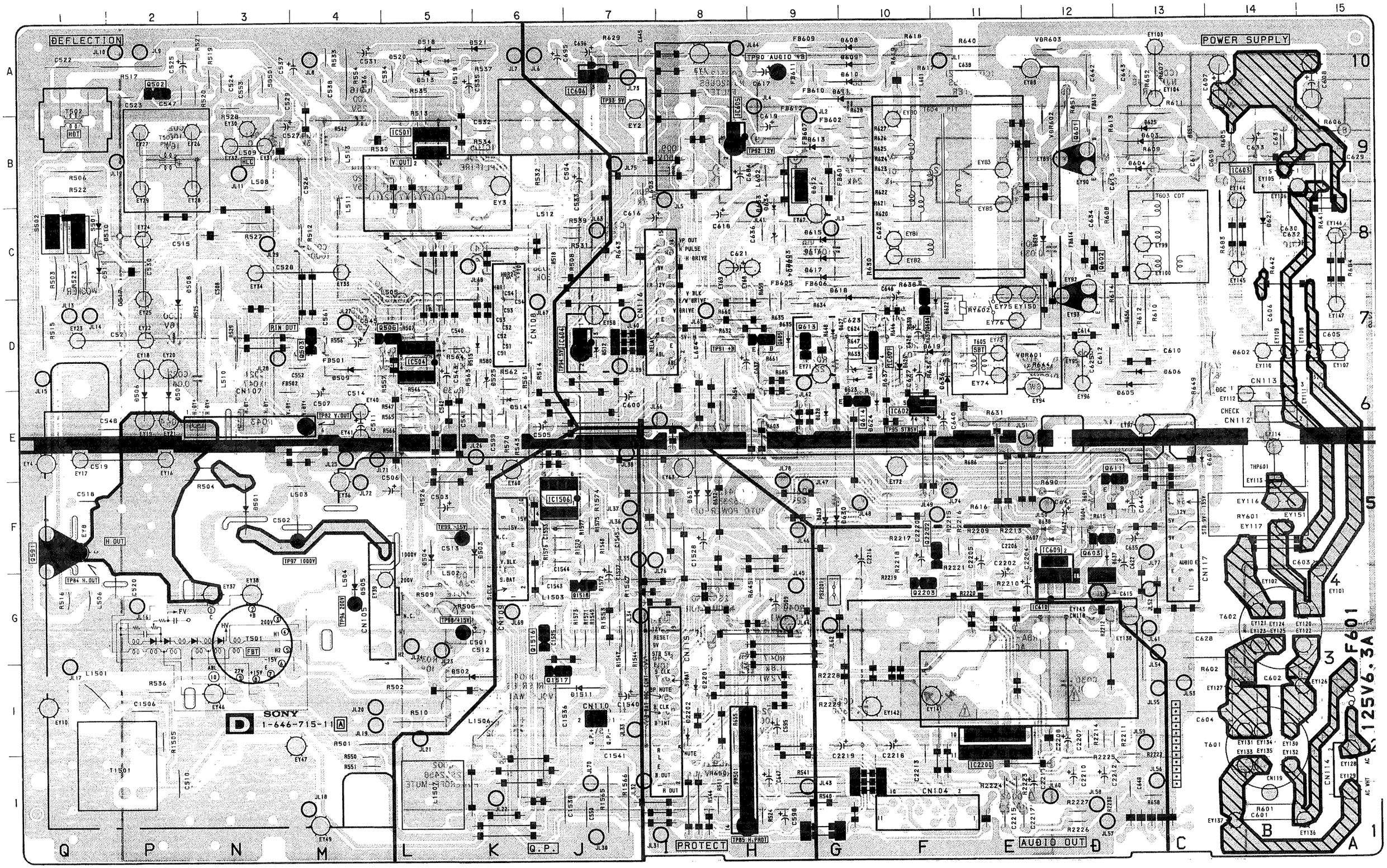
— D Board —

① 30 Vp-p (V)	② 60 Vp-p (V)	③ 32 Vp-p (V)
④ 3.5 Vp-p (H)	⑤ 185 Vp-p (H)	⑥ 19 Vp-p (H)
⑦ 1000Vp-p (H)	⑧ 140 Vp-p (H)	⑨ 2.4 Vp-p (V)
⑩ 3.6 Vp-p (H)	⑪ 230 Vp-p (H)	⑫ 2.8 Vp-p (V)


D
POWER SUPPLY DEFLECTION AUDIO OUT
CAUTION
When replacing IC601, be sure to check the +B line voltage value.Refer to the Safety Adjustment Section
The voltage value of Q601 and Q602 collector must be between the Q602 value+
CAUTION
As there are two kinds of ground on this board,be careful when as asuring the voltages waveforms
CAUTION (US MODEL ONLY)
This set equipped with a polarized ac power cord plug(one blade of the plug is wider than the other).When replacing the ac power cord,be sure to connect it with specified part number as shown in this diagram
KV-32TS36/32TS46 only
KV-27TS25/27TS32/27TS36 only PM-36
PROTECT MODULE KV-32TS36/32TS46 only: PM-39
R511, R524:See Page 41,42
CAUTION
When replacing T501,be sure to check the point voltage value(TP85).Refer to the Safety Adjustment Section.
TO E BOARD CN125
TO M BOARD CN130
TO M BOARD CN131
TO A BOARD CN151
TO C BOARD CN702
TO PICTURE TUBE
TO DY
TO E BOARD BY-2
TO C BOARD J701

D [POWER SUPPLY, DEFLECTION, AUDIO OUT]

— D Board —



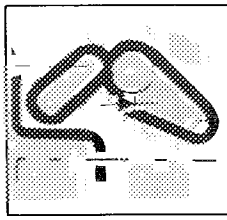
— **D Board** —

IC	
IC501	B – 5
IC504	D – 5
IC601	D – 10
IC602	E – 10
IC604	D – 7
IC605	B – 8
IC606	A – 7
IC610	G – 12
IC2200	I – 11

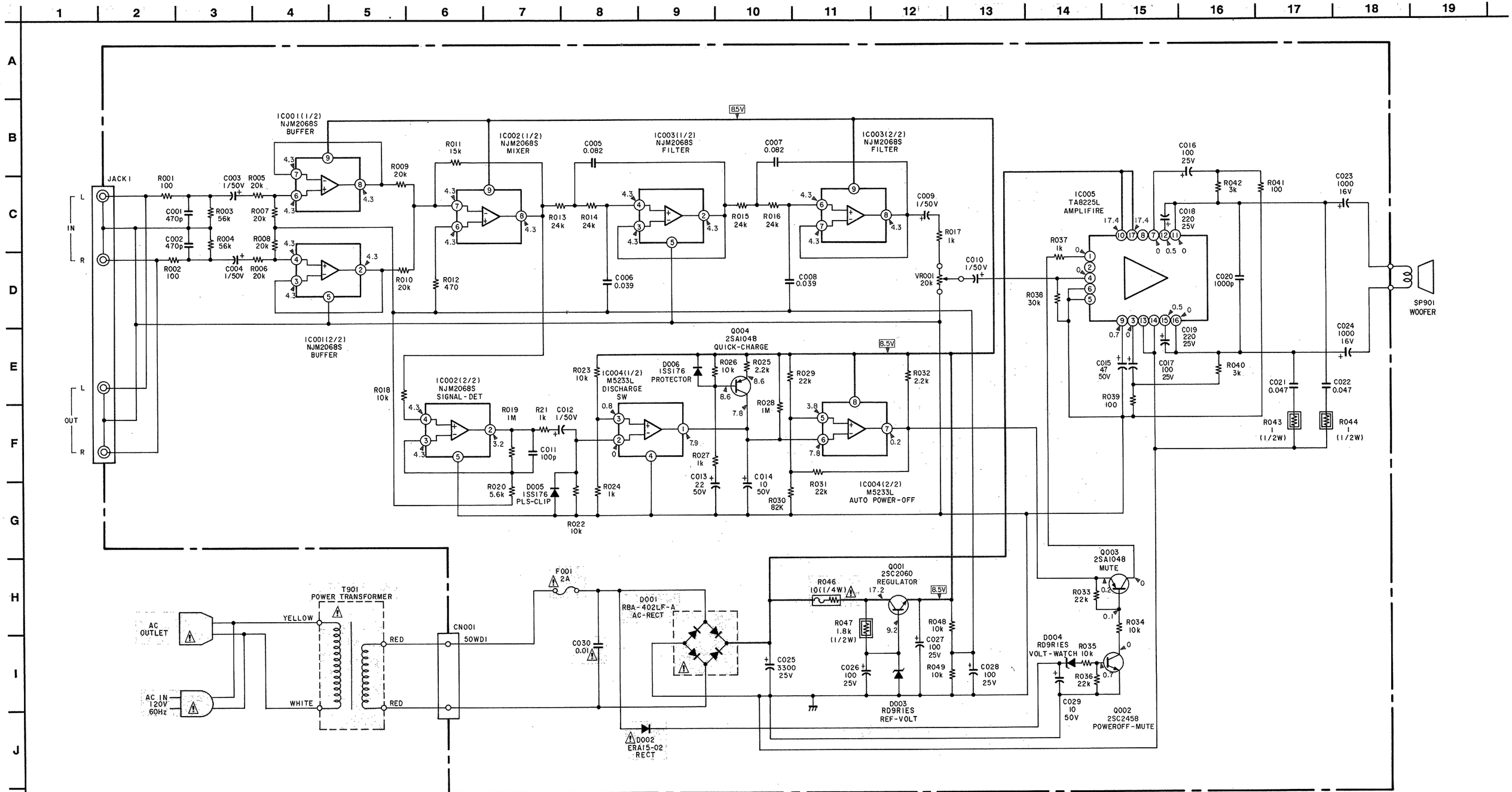
TRANSISTOR	
Q502	A – 2
Q503	D – 4
Q505	D – 5
Q591	F – 1
Q601	B – 12
Q602	C – 12
Q603	F – 12
Q604	D – 10
Q605	D – 9
Q611	F – 12
Q613	D – 9
Q614	E – 10
Q2202	F – 10
Q2203	G – 10

DIODE	
D501	F – 3
D502	H – 5
D503	F – 5
D504	F – 5
D505	G – 4
D506	E – 2
D507	E – 2
D508	C – 2
D509	D – 4
D510	C – 1
D511	C – 1
D512	D – 7
D513	A – 5
D514	E – 6
D515	D – 6
D601	E – 13
D602	D – 14
D603	B – 13
D605	E – 13
D607	F – 12
D608	A – 10
D609	A – 10
D610	A – 10
D611	A – 10
D612	B – 9
D613	B – 9
D614	D – 10
D615	C – 9
D616	C – 9
D617	C – 9
D618	D – 10
D619	D – 10
D622	D – 11
D623	D – 10
D624	E – 10
D626	D – 10
D627	D – 9
D628	E – 9
D629	F – 9
D630	F – 9
D631	F – 8
D632	F – 8
D633	C – 9
D634	C – 9
D635	D – 9
D636	D – 11
D637	F – 12
D638	F – 12
D2201	H – 8

TEST POINT	
TP82	E – 4
TP84	F – 1
TP85	I – 8
TP90	A – 9
TP91	D – 8
TP92	B – 8
TP93	A – 7
TP94	D – 7
TP95	E – 10
TP96	G – 4
TP97	F – 3
TP98	G – 5
TP99	F – 5



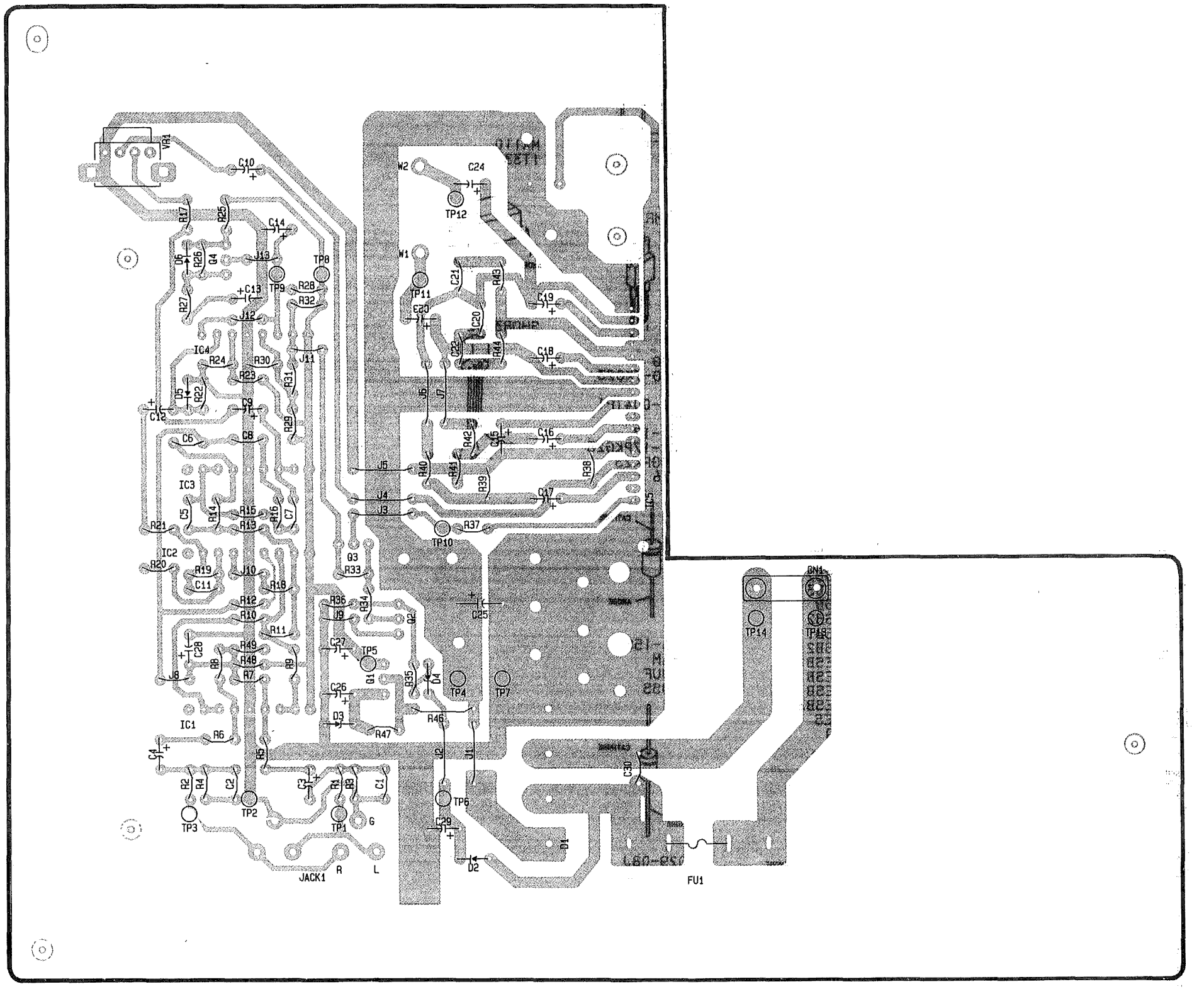
NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

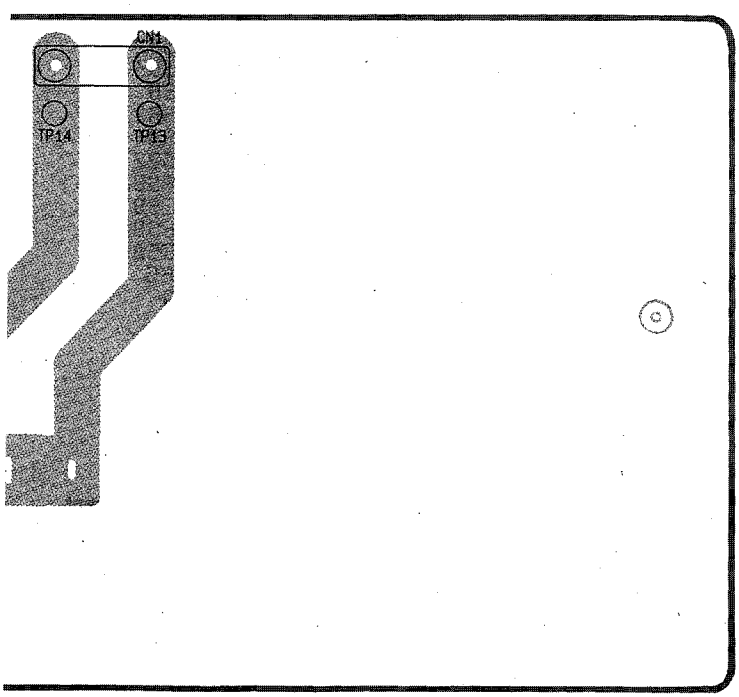

JACK1
IN
L
R
OUT
L
R
R001 100
R002 100
C001 470p
C002 470p
C003 1/50V
C004 1/50V
R003 56k
R004 56k
R005 20k
R006 20k
R007 20k
R008 20k
IC001(1/2) NJM2068S BUFFER
IC001(2/2) NJM2068S BUFFER
R009 20k
R010 20k
R011 15k
R012 470
IC002(1/2) NJM2068S MIXER
C005 0.082
C006 0.039
IC003(1/2) NJM2068S FILTER
R013 24k
R014 24k
C007 0.082
C008 0.039
IC003(2/2) NJM2068S FILTER
R015 24k
R016 24k
C009 1/50V
R017 1k
VR001 20k
C010 1/50V
8.5V
R018 10k
IC002(2/2) NJM2068S SIGNAL-DET
R019 1M
R21 1k
C012 1/50V
C011 100p
R020 5.6k
D005 1SS176 PLS-CLIP
R022 10k
R023 10k
IC004(1/2) M5233L DISCHARGE SW
R024 1k
D006 1SS176 PROTECTOR
R026 10k
R025 2.2k
Q004 2SA1048 QUICK-CHARGE
R027 1k
R028 1M
C013 22 50V
C014 10 50V
R029 22k
R030 82K
R031 22k
R032 2.2k
IC004(2/2) M5233L AUTO POWER-OFF
IC005 TA8225L AMPLIFIRE
C016 100 25V
C018 220 25V
C019 220 25V
C020 1000p
C015 47 50V
C017 100 25V
R037 1k
R038 30k
R039 100
R040 3k
R041 100
R042 3k
C021 0.047
C022 0.047
C023 1000 16V
C024 1000 16V
R043 1 (1/2W)
R044 1 (1/2W)
SP901 WOOFER
AC OUTLET
AC IN 120V 60Hz
T901 POWER TRANSFORMER
YELLOW
WHITE
RED
RED
CN001 50WD1
F001 2A
C030 0.01
D001 RBA-402LF-A AC-RECT
D002 ERA15-02 RECT
R046 10(1/4W)
Q001 2SC2060 REGULATOR
R047 1.8k (1/2W)
R048 10k
R049 10k
C025 3300 25V
C026 100 25V
C027 100 25V
C028 100 25V
D003 RD9RIES REF-VOLT
Q003 2SA1048 MUTE
R033 22k
R034 10k
R035 10k
R036 22k
D004 RD9RIES VOLT-WATCH
C029 10 50V
Q002 2SC2458 POWEROFF-MUTE

KV-27TS29/27TS32/27TS36
RM-Y116 RM-Y117 RM-Y118
KV-32TS36/32TS46
RM-Y118 RM-Y118 SA-W200

SUPER WOOFER

— SUPER WOOFER Board —

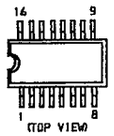



CN1
TP14
TP13

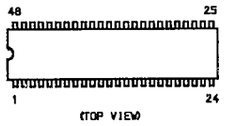
KV-27TS29/27TS32/27TS36
RM-Y116 RM-Y117 RM-Y118
KV-32TS36/32TS46
RM-Y118 RM-Y118 SA-W200

6-5. SEMICONDUCTORS

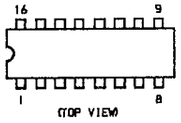
BU4053BF
CXA1315M



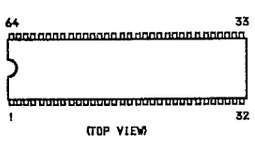
CXA1465AS
CXA1545AS



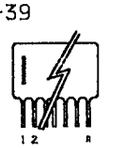
CXA1526P



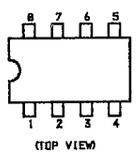
CXP80424-SV4397



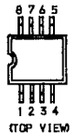
ĐM-48
PM-38
PM-39



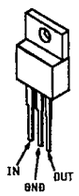
LM358P
µPC358C
µPC393C
24C02AI/P



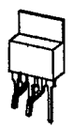
LM358PS
MM1114XFF
MM1118XFF



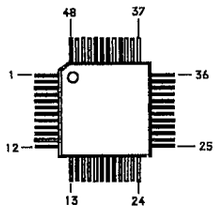
LM7805CT
LM7812CT
MC7809CT
RC7809FA



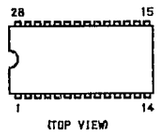
L78LR05Đ-MA



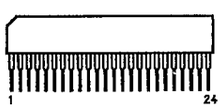
MB3512PF-EF



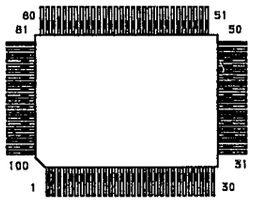
MB40176PF-EF



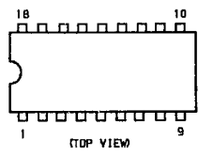
MB81461-12-PSZ-G-BF2



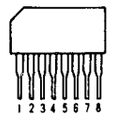
MB86144



MC144143
Z86128120PSC



M5233L



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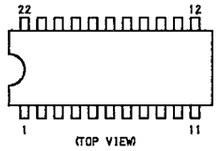

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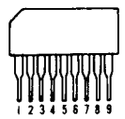

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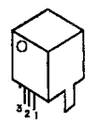

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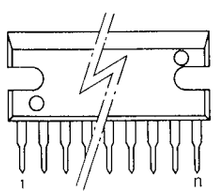

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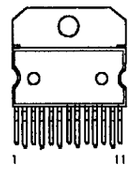

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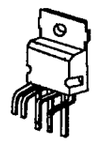

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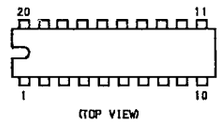

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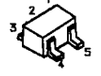

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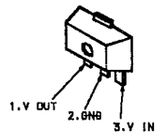

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2SA1048
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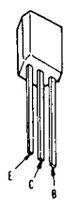

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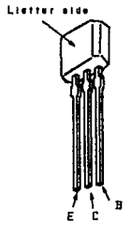

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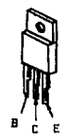
2SĐ2061



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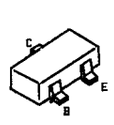

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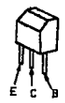

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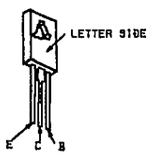

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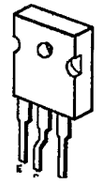

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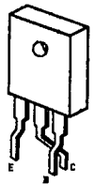

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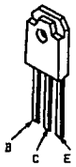

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ĐIN20R
ERA15-02
ERA82-004
ERA83-006
RĐ10ESB
RĐ10ESB2
RĐ12ESB3
RĐ13ESB
RĐ13ESB2
RĐ33ESB1
RĐ33ESB2
RĐ3.6ESB1
RĐ5.1ESB
RĐ5.1ESB1
RĐ8.2ESB3
RĐ9R1ES
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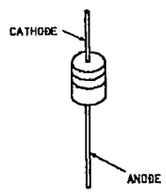

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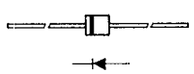

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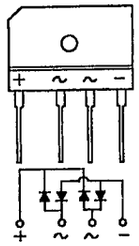

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RGP02-17PKG23
RGP10GPK23
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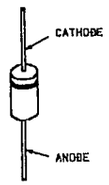

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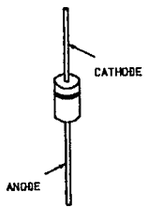
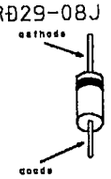


ERĐ29-08J



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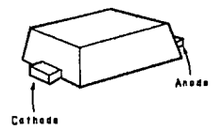

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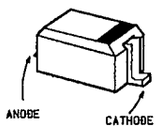
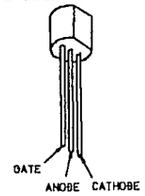


SHOR3Đ42



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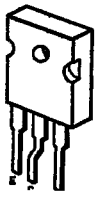

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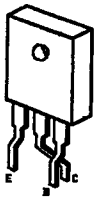

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ERA83-006
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RÐ10ESB2
RÐ12ESB3
RÐ13ESB
RÐ13ESB2
RÐ33ESB1
RÐ33ESB2
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RÐ5.1ESB
RÐ5.1ESB1
RÐ8.2ESB3
RÐ9R1ES
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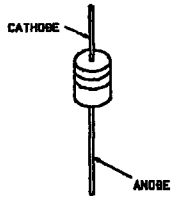

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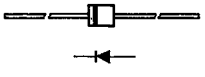

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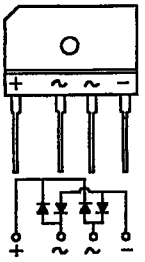

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G08Ð
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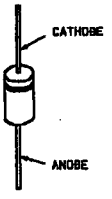

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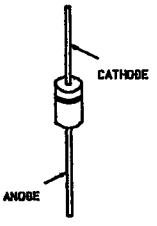
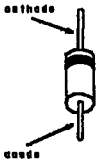


ERÐ29-08J



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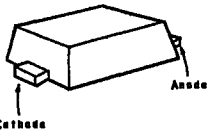

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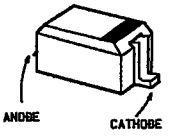
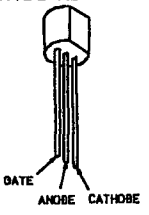


SHOR3Ð42



SECTION 7
EXPLODED VIEWS

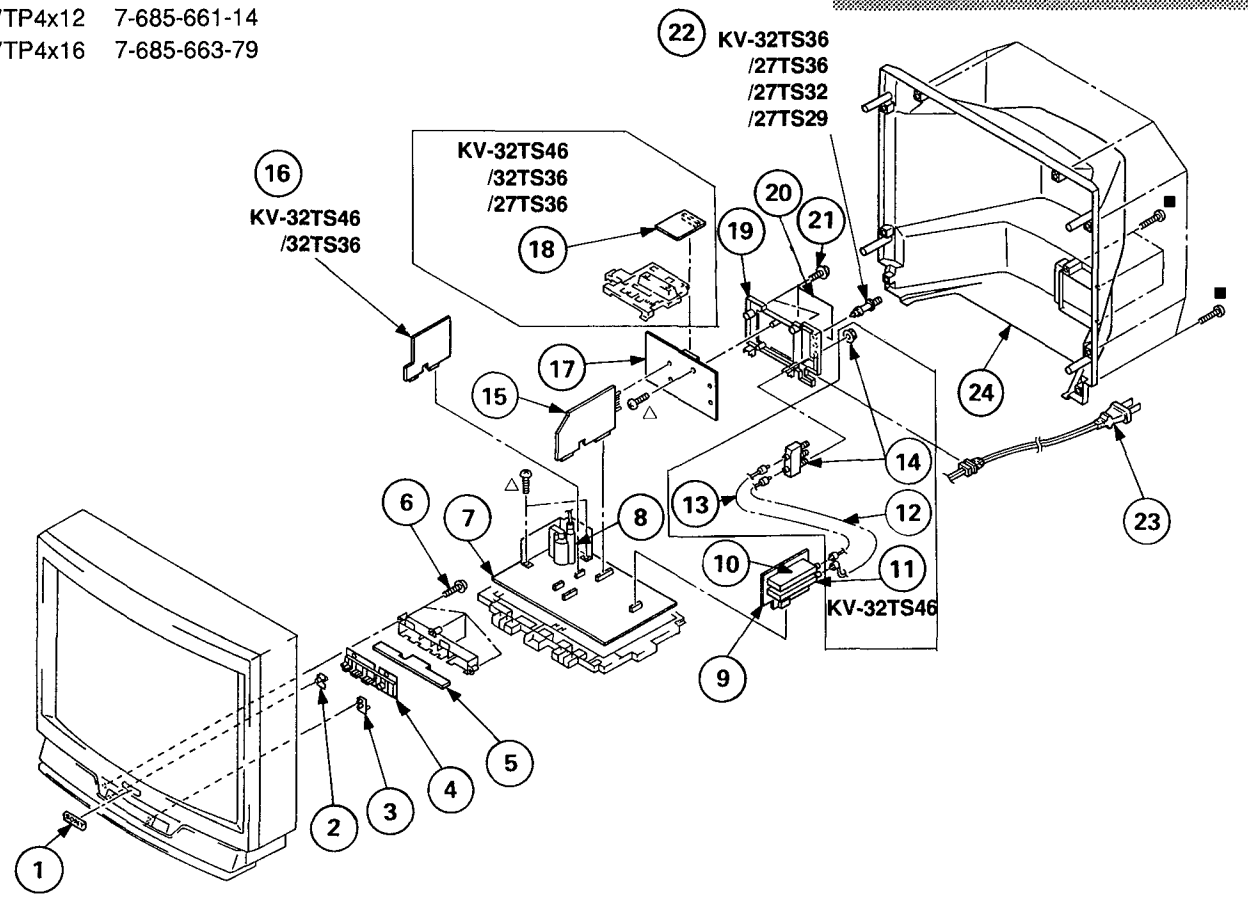
NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service
- The construction parts of an assembled part are indicated with a collation number in the remark column
- Items marked "*" are not stocked since they are seldom required for routine service Some delay should be anticipated when ordering these items

The components identified by shading and mark ⚠ are critical for safety
Replace only with part number specified

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite
Ne les remplacer que par une piece portant le numero specifie

7-1. CHASSIS

△ : BVTP4x12 7-685-661-14
■ : BVTP4x16 7-685-663-79



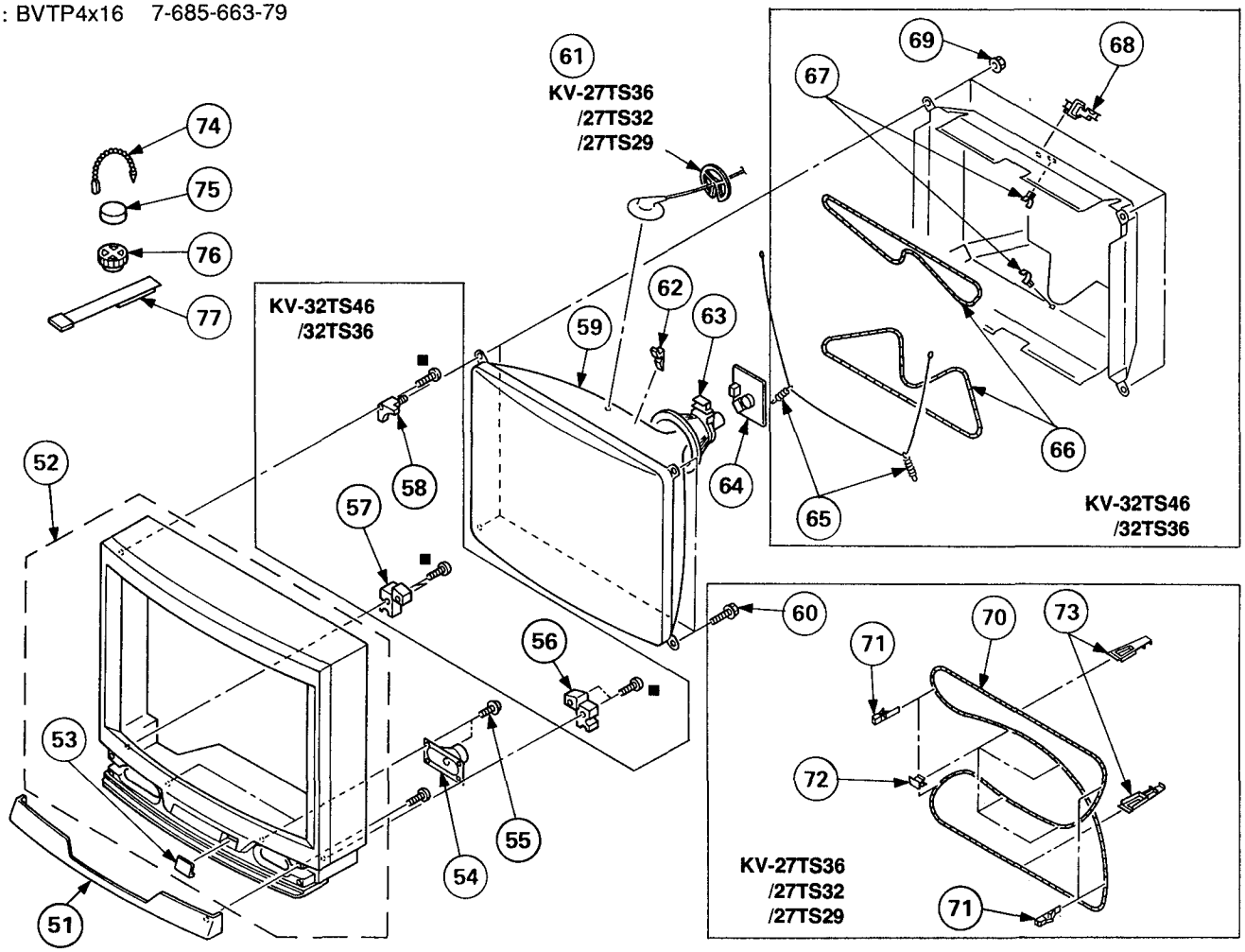
REF.NO.	PART NO.	DESCRIPTION	REMARK
1	4-394-048-01	EMBLEM (NO.9), SONY	
2	4-039-458-01	FILTER, REMOTE	
3	4-039-457-01	GUIDE, LED	
4	4-039-525-01	BUTTON, MULTI	
5	*1-646-717-11	H BOARD	
6	4-319-520-11	SCREW, SPECIAL (+PW4X30)	
7	*A-1346-112-A	D BOARD, COMPLETE	(KV-32TS46/32TS36)
7	*A-1346-129-A	D BOARD, COMPLETE	(KV-27TS36/27TS32/27TS29)
8	*1-453-146-11	TRANSFORMER ASSY, FLYBACK	(KV-27TS36)
9	*A-1297-065-A	A BOARD, COMPLETE	(KV-32TS36/27TS36/27TS32/27TS29)
9	*A-1297-112-A	A BOARD, COMPLETE	(KV-32TS46)
10	*8-598-039-60	TUNER BTP-W4401	
11	*8-598-047-60	TUNER BTP-W4403	(KV-32TS46)
12	*1-751-136-11	CABLE, PIN	(KV-32TS46)
13	*1-751-135-11	CABLE, PIN	(KV-32TS46)
14	1-417-178-11	SELECTOR, ANTENNA (AS-2)	(KV-32TS46)
15	*A-1306-427-A	M BOARD, COMPLETE	(KV-32TS36/27TS36/27TS32/27TS29(US))
15	*A-1306-432-A	M BOARD, COMPLETE	(KV-32TS36(CND)/27TS36(CND)/27TS32/27TS29(CND))
15	*A-1306-433-A	M BOARD, COMPLETE	(KV-32TS46(CND))
15	*A-1306-434-A	M BOARD, COMPLETE	(KV-32TS46(US))
16	*A-1341-622-A	E BOARD, COMPLETE	(KV-32TS46/32TS36)
17	*A-1394-415-A	UA BOARD, COMPLETE	(KV-32TS36/27TS36)
17	*A-1394-441-A	UA BOARD, COMPLETE	(KV-27TS32)
17	*A-1394-437-A	UA BOARD, COMPLETE	(KV-27TS29)
17	*A-1394-435-A	UA BOARD, COMPLETE	(KV-32TS46)
18	*A-1195-062-A	P BOARD, COMPLETE	(KV-32TS46/32TS36/27TS36)
19	4-039-517-01	TERMINAL BOARD, ANTENNA	(KV-32TS46)
19	4-039-524-01	TERMINAL BOARD, ANTENNA	(KV-32TS36/27TS36/27TS32/27TS29)
20	4-040-090-01	LABEL, TERMINAL	(KV-27TS32)
20	4-039-903-01	LABEL, TERMINAL	(KV-27TS29)
20	4-039-834-01	LABEL, TERMINAL	(KV-32TS46/32TS36/27TS36)
21	4-382-854-11	SCREW (M3X10), P, SW (+)	
22	1-573-657-11	PLUG, F-PIN	(KV-32TS36/27TS36/27TS32/27TS29)
23	1-751-059-11	CORD, POWER (WITH CONNECTOR) (10A/120V)	
24	4-039-463-01	COVER, REAR	(KV-27TS36/27TS32/27TS29)
24	4-039-634-01	COVER, REAR	(KV-32TS46/32TS36)

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

The components identified by shading and mark ⚠ are critical for safety
Replace only with part number specified.

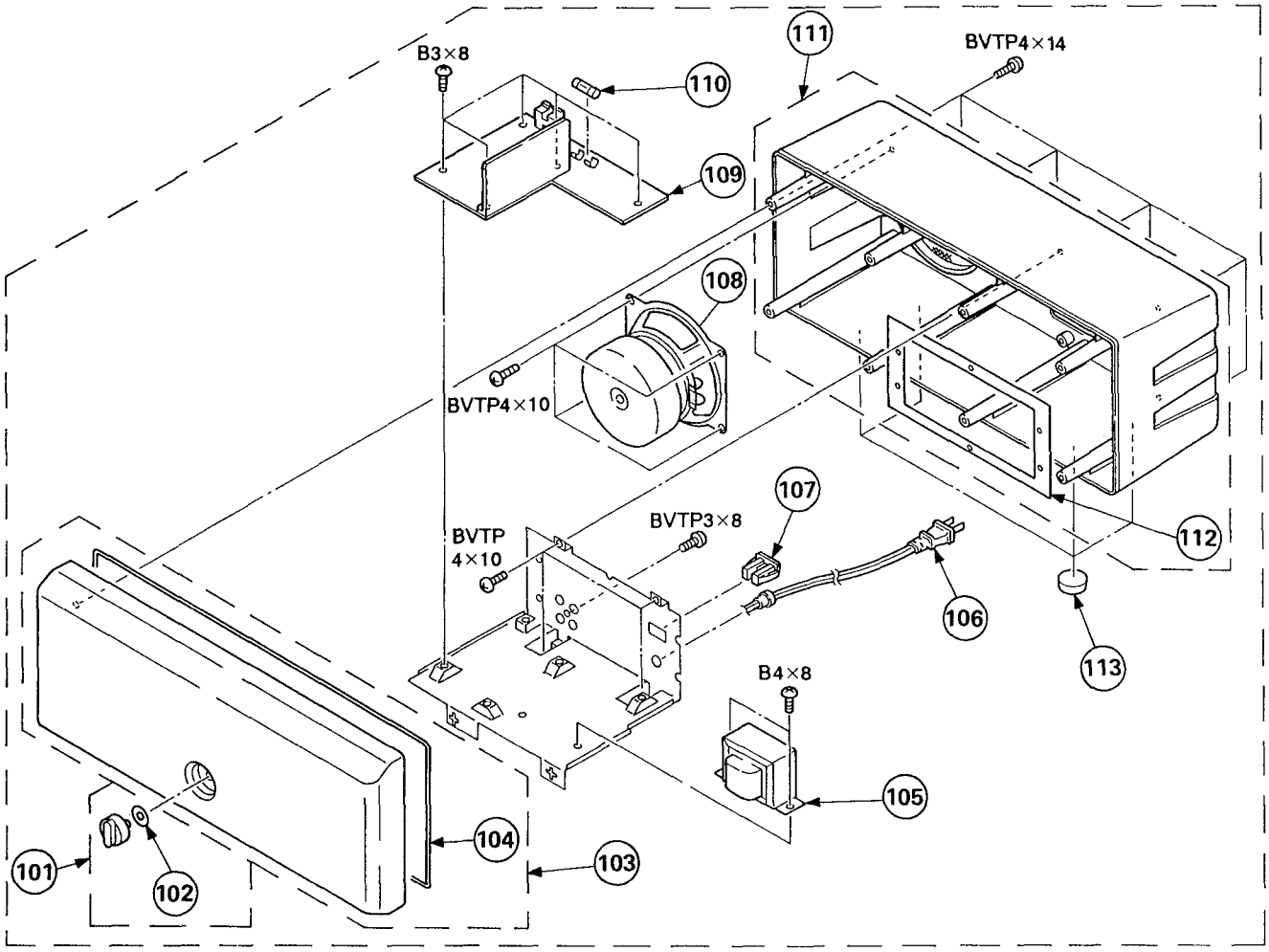
7-2. PICTURE TUBE

■ : BVTP4x16 7-685-663-79



REF.NO.	PART NO.	DESCRIPTION	REMARK
51	X-4031-018-1	GRILLE ASSY, SPEAKER (KV-32TS46/32TS36)	
51	X-4031-029-1	GRILLE ASSY, SPEAKER (KV-27TS36/27TS32/27TS29)	
52	X-4031-039-1	BEZNET ASSY (KV-27TS36)	53
52	X-4031-038-2	BEZNET ASSY (KV-27TS32)	53
52	X-4031-026-1	BEZNET ASSY (KV-27TS29)	53
52	X-4031-019-1	BEZNET ASSY (KV-32TS36)	53
52	X-4031-019-2	BEZNET ASSY (KV-32TS46)	53
53	4-039-462-01	DOOR, CONTROL (KV-32TS36/27TS36)	
53	4-039-462-11	DOOR, CONTROL (KV-27TS32)	
53	4-039-459-01	PANEL (KV-27TS29)	
53	4-039-462-21	DOOR, CONTROL (KV-32TS46)	
54	1-544-549-11	SPEAKER	
55	4-388-477-01	SCREW(3X16),TAPPING,+BV WASHER	
56	*4-031-428-01	SUPPORT (RIGHT) (PICTURE TUBE) (KV-32TS46/32TS36)	
57	*4-031-430-01	SUPPRT (LEFT) (PICTURE TUBE) (KV-32TS46/32TS36)	
58	4-031-429-01	BRACKET, PICTURE TUBE	
59	⚠ 8-733-723-05	PICTURE TUBE (A80JYY50X) (KV-32TS46/32TS36)	
59	⚠ 8-733-838-05	PICTURE TUBE (A68KZJ50X) (KV-27TS36/27TS32/27TS29)	
60	4-390-505-01	SCREW(7), TAPPING (KV-27TS36/27TS32/27TS29)	
61	*3-704-372-01	HOLDER, HV CABLE (KV-27TS36/27TS32/27TS29)	
62	3-704-495-01	SPACER, DY (KV-32TS46/32TS36)	
63	⚠ 1-451-315-41	DEFLECTION YOKE (Y34FXA) (KV-32TS46/32TS36)	
63	⚠ 1-451-275-41	DEFLECTION YOKE (Y34FXA) (KV-27TS36/27TS32/27TS29)	
64	*A-1331-264-A	C BOARD, COMPLETE	
65	4-036-329-01	SPRING (B), TENSION (KV-27TS36/27TS32/27TS29)	
66	⚠ 1-402-952-11	COIL,DEMAGNETIZATION (KV-32TS46/32TS36)	
67	*4-371-629-01	STOPPER, WIRE (KV-32TS46/32TS36)	
68	4-033-681-01	HOLDER, LEAD (KV-32TS46/32TS36)	
69	4-387-204-01	NUT, SPECIAL, PICTURE TUBE (KV-32TS46/32TS36)	
70	1-406-726-11	COIL, DEGAUSSING (KV-27TS36/27TS32/27TS29)	
71	4-040-388-01	HOLDER(S), DGC (KV-27TS36/27TS32/27TS29)	
72	4-040-537-01	HOLDER(A), DGC (KV-27TS36/27TS32/27TS29)	
73	4-040-387-01	HOLDER(M), DGC (KV-27TS36/27TS32/27TS29)	
74	4-308-870-00	CLIP, LEAD WIRE	
75	1-452-032-00	MAGNET,DISK	
76	1-452-094-00	MAGMET, ROTATABLE; 15MM ϕ	
77	X-4306-312-0	PERMALLOY ASSY, CONVERGENCE	

7-3. SPEAKER (KV-32TS46 (US/CND))



The components identified by shading and mark ⚠ are critical for safety
Replace only with part number specified

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite
Ne les remplacer que par une piece portant le numero specifie

REF.NO.	PART NO.	DESCRIPTION	REMARK
101	9-904-749-01	VOLUME NOB	
102	9-904-748-01	FELT WASHER	
103	9-904-745-01	FRONT CASE	104
104	9-904-747-01	ENCLOSURE SEALANT TUBE	
105	⚠ 9-904-751-01	TRANSFORMER, POWER	
106	⚠ 9-904-750-01	CORD, POWER	
107	⚠ 9-904-753-01	AC OUTLET	
108	9-900-278-01	SPEAKER	
109	9-904-754-01	AMP KIT(TWY1019-A)	
110	⚠ 9-904-752-01	FUSE	
111	9-904-744-01	CABINET	112
112	9-904-746-01	ENCLOSURE SEALANT PACKING	
113	4-040-527-01	FOOT	

SECTION 8
ELECTRICAL PARTS LIST

P

NOTE:

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Ne les remplacer que par une piece portant le numero specifie

- Items marked "*" are not stocked since they are seldom required for routine service Some delay should be anticipated when ordering these items
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted

RESISTORS
- All resistors are in ohms
- F: nonflammable

When indicating parts by reference number, please include the board name

CAPACITORS
- MF: μF, PF: μμF

COILS
- MMH: mH, UH: μH

- The components identified by ⊠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation
Should replacement be required, replace only with the value originally used

REF.NO.	PART NO.	DESCRIPTION			REMARK
*A-1195-062-A	P BOARD, COMPLETE (KV-32TS36/32TS46 ********** /27TS36)				
		<CAPACITOR>			
C3201	1-124-477-11	ELECT 47MF	20%	16V	
C3203	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V	
C3204	1-124-907-11	ELECT 10MF	20%	50V	
C3205	1-124-907-11	ELECT 10MF	20%	50V	
C3206	1-124-907-11	ELECT 10MF	20%	50V	
C3207	1-163-117-00	CERAMIC CHIP 100PF	5%	50V	
C3208	1-163-117-00	CERAMIC CHIP 100PF	5%	50V	
C3209	1-123-382-00	ELECT 3.3MF	20%	50V	
C3210	1-124-477-11	ELECT 47MF	20%	16V	
C3212	1-123-382-00	ELECT 3.3MF	20%	50V	
C3213	1-164-346-11	CERAMIC CHIP 1MF		16V	
C3214	1-164-346-11	CERAMIC CHIP 1MF		16V	
C3215	1-164-346-11	CERAMIC CHIP 1MF		16V	
C3216	1-164-005-11	CERAMIC CHIP 0.47MF		25V	
C3217	1-164-346-11	CERAMIC CHIP 1MF		16V	
C3218	1-164-346-11	CERAMIC CHIP 1MF		16V	
C3219	1-126-103-11	ELECT 470MF	20%	16V	
C3220	1-164-346-11	CERAMIC CHIP 1MF		16V	
C3221	1-164-346-11	CERAMIC CHIP 1MF		16V	
C3222	1-164-336-11	CERAMIC CHIP 0.33MF		25V	
C3223	1-164-336-11	CERAMIC CHIP 0.33MF		25V	
C3224	1-164-222-11	CERAMIC CHIP 0.22MF		25V	
C3225	1-164-222-11	CERAMIC CHIP 0.22MF		25V	
C3226	1-164-005-11	CERAMIC CHIP 0.47MF		25V	
C3227	1-164-346-11	CERAMIC CHIP 1MF		16V	
C3228	1-163-117-00	CERAMIC CHIP 100PF	5%	50V	
C3229	1-163-093-00	CERAMIC CHIP 10PF	5%	50V	
C3230	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C3231	1-163-125-00	CERAMIC CHIP 220PF	5%	50V	
C3232	1-163-117-00	CERAMIC CHIP 100PF	5%	50V	
C3233	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C3234	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C3235	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C3236	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C3237	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C3238	1-163-101-00	CERAMIC CHIP 22PF	5%	50V	
C3239	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C3240	1-163-101-00	CERAMIC CHIP 22PF	5%	50V	
C3241	1-163-103-00	CERAMIC CHIP 27PF	5%	50V	
C3242	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C3243	1-163-117-00	CERAMIC CHIP 100PF	5%	50V	
C3244	1-163-113-00	CERAMIC CHIP 68PF	5%	50V	
C3245	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C3246	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C3247	1-163-033-00	CERAMIC CHIP 0.022MF		50V	
C3248	1-163-125-00	CERAMIC CHIP 220PF	5%	50V	
C3249	1-163-117-00	CERAMIC CHIP 100PF	5%	50V	
C3250	1-163-113-00	CERAMIC CHIP 68PF	5%	50V	
C3251	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C3252	1-163-103-00	CERAMIC CHIP 27PF	5%	50V	
C3253	1-163-101-00	CERAMIC CHIP 22PF	5%	50V	
C3254	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C3255	1-163-101-00	CERAMIC CHIP 22PF	5%	50V	
C3256	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C3257	1-163-117-00	CERAMIC CHIP 100PF	5%	50V	
C3258	1-163-113-00	CERAMIC CHIP 68PF	5%	50V	
C3259	1-163-111-00	CERAMIC CHIP 56PF	5%	50V	
C3260	1-163-119-00	CERAMIC CHIP 120PF	5%	50V	
C3261	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C3263	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C3264	1-165-319-11	CERAMIC CHIP 0.1MF		50V	
C3265	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C3266	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C3267	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C3268	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C3269	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C3270	1-165-319-11	CERAMIC CHIP 0.1MF		50V	
C3271	1-165-319-11	CERAMIC CHIP 0.1MF		50V	
C3272	1-165-319-11	CERAMIC CHIP 0.1MF		50V	
C3273	1-163-109-00	CERAMIC CHIP 47PF	5%	50V	
C3274	1-163-101-00	CERAMIC CHIP 22PF	5%	50V	
C3275	1-163-101-00	CERAMIC CHIP 22PF	5%	50V	
C3276	1-163-111-00	CERAMIC CHIP 56PF	5%	50V	
C3277	1-163-101-00	CERAMIC CHIP 22PF	5%	50V	
C3278	1-163-101-00	CERAMIC CHIP 22PF	5%	50V	
C3279	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C3280	1-124-907-11	ELECT 10MF	20%	50V	
C3282	1-164-346-11	CERAMIC CHIP 1MF		16V	
		<CONNECTOR>			
CN150	1-573-297-11	CONNECTOR, BOARD TO BOARD 18P			
		<DIODE>			
D3202	8-719-031-68	DIODE HVU359-TRU			
D3203	8-719-404-46	DIODE MA110			
D3208	8-719-110-17	DIODE RD10ESB2			
D3209	8-719-110-17	DIODE RD10ESB2			
		<IC>			
IC3200	8-759-517-74	IC MB81461-12-PSZ-G-BF2			
IC3201	8-759-093-29	IC MB86144			
IC3202	8-759-093-28	IC MB40176PF-BF			
IC3203	8-759-093-28	IC MB40176PF-BF			
IC3204	8-759-093-26	IC MB3512PF-BF			

REF.NO.	PART NO.	DESCRIPTION				REMARK
IC3205	8-759-243-19	IC TC7SU04F				
		<COIL>				
L3201	1-410-470-11	INDUCTOR	10UH			
L3202	1-408-424-00	INDUCTOR	180UH			
L3203	1-408-424-00	INDUCTOR	180UH			
L3204	1-410-476-11	INDUCTOR	33UH			
L3205	1-410-470-11	INDUCTOR	10UH			
L3206	1-410-387-11	INDUCTOR	33UH			
L3207	1-410-387-11	INDUCTOR	33UH			
L3208	1-410-387-11	INDUCTOR	33UH			
L3209	1-410-387-11	INDUCTOR	33UH			
		<TRANSISTOR>				
Q3201	8-729-422-36	TRANSISTOR 2SB709A-Q				
Q3202	8-729-422-27	TRANSISTOR 2SD601A-Q				
Q3203	8-729-422-36	TRANSISTOR 2SB709A-Q				
Q3204	8-729-422-36	TRANSISTOR 2SB709A-Q				
Q3206	8-729-422-27	TRANSISTOR 2SD601A-Q				
Q3207	8-729-422-36	TRANSISTOR 2SB709A-Q				
Q3208	8-729-422-27	TRANSISTOR 2SD601A-Q				
Q3209	8-729-422-36	TRANSISTOR 2SB709A-Q				
Q3210	8-729-422-36	TRANSISTOR 2SB709A-Q				
		<RESISTOR>				
R3201	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R3202	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R3203	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R3204	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R3205	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R3207	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R3208	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R3209	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R3210	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R3211	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R3212	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R3213	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R3214	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R3215	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R3216	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R3217	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R3218	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3219	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3220	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3221	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W	
R3222	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W	
R3223	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R3224	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3225	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R3226	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R3227	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R3228	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R3229	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R3230	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R3231	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R3232	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R3233	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3234	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R3235	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R3236	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R3237	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R3238	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3239	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R3241	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R3242	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3243	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R3244	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R3245	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R3246	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R3247	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R3248	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R3249	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R3250	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R3251	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3252	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R3253	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R3254	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R3255	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R3256	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R3259	1-216-298-00	METAL GLAZE	2.2	5%	1/10W	
R3260	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R3263	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R3264	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R3265	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3266	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R3267	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R3268	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R3269	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R3270	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W	
R3271	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W	
R3273	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R3274	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3275	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3276	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3277	1-216-298-00	METAL GLAZE	2 2	5%	1/10W	
		<CRYSTAL>				
X3201	1-567-878-11	VIBRATOR, CRYSTAL				
X3202	1-567-878-11	VIBRATOR, CRYSTAL				
		**********				
	*A-1297-065-A	A BOARD, COMPLETE (KV-32TS36/27TS36				
		********** /27TS32/27TS29)				
	*A-1297-112-A	A BOARD, COMPLETE (KV-32TS46)				
		**********				
		<CAPACITOR>				
C171	1-124-907-11	ELECT	10MF	20%	50V	(KV-32TS46)
C173	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C174	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C175	1-126-103-11	ELECT	470MF	20%	16V	
C176	1-126-103-11	ELECT	470MF	20%	16V	
C177	1-124-907-11	ELECT	10MF	20%	50V	
C178	1-126-101-11	ELECT	100MF	20%	16V	
C179	1-124-916-11	ELECT	22MF	20%	25V	
C180	1-124-916-11	ELECT	22MF	20%	25V	(KV-32TS46)
C181	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V	
C182	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V	(KV-32TS46)
C184	1-124-907-11	ELECT	10MF	20%	50V	(KV-32TS46)

A M

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Replace only with part number specified

REF.NO.	PART NO.	DESCRIPTION	REMARK
		<CONNECTOR>	
CN103	*1-564-519-11	PLUG, CONNECTOR 4P	
CN151	*1-573-979-11	CONNECTOR, BOARD TO BOARD 11P	
CN152	1-750-394-11	PIN, CONNECTOR (STAKING) 32P	
CN164	*1-564-505-11	PLUG, CONNECTOR 2P	
CN165	*1-564-505-11	PLUG, CONNECTOR 2P	
		<DODE>	
D170	8-719-110-78	DIODE RD33ESB2	
D175	8-719-110-76	DIODE RD33ESB1	(KV-32TS46)
		<IC>	
IC172	8-759-932-67	IC BU4053BF	(KV-32TS46)
		<COIL>	
L170	1-408-408-00	INDUCTOR 8.2UH	
L171	1-408-408-00	INDUCTOR 8.2UH	
L172	1-408-408-00	INDUCTOR 8.2UH	
L173	1-408-408-00	INDUCTOR 8.2UH	(KV-32TS46)
		<TRANSISTOR>	
Q172	8-729-422-36	TRANSISTOR 2SB709A-Q	(KV-32TS46)
Q173	8-729-422-36	TRANSISTOR 2SB709A-Q	(KV-32TS46)
		<RESISTOR>	
R170	1-216-025-00	METAL GLAZE 100 5% 1/10W	(KV-32TS36/27TS36/27TS32/27TS29)
R173	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-32TS46)
R174	1-216-689-11	METAL GLAZE 39K 5% 1/10W	
R175	1-215-900-11	METAL OXIDE 22K 5% 2W F	(KV-32TS46)
R176	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-32TS36/27TS36/27TS32/27TS29)
R177	1-215-900-11	METAL OXIDE 22K 5% 2W F	
R179	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R181	1-216-025-00	METAL GLAZE 100 5% 1/10W	(KV-32TS46)
R185	1-216-025-00	METAL GLAZE 100 5% 1/10W	(KV-32TS46)
R187	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R188	1-216-689-11	METAL GLAZE 39K 5% 1/10W	(KV-32TS46)
R189	1-216-083-00	METAL GLAZE 27K 5% 1/10W	(KV-32TS46)
R190	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	(KV-32TS46)
R191	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	(KV-32TS46)
R193	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R196	1-216-037-00	METAL GLAZE 330 5% 1/10W	(KV-32TS46)
		<TUNER>	
TU101	8-598-039-00	TUNER BTF-WA40I	
TU102	8-598-047-00	TUNER BTF-WA40I	(KV-32TS46)

****

*A-1306-427-A M BOARD, COMPLETE
****
(KV-32TS36(US)/27T36(US)/27TS32/27TS29(US))

*A-1306-432-A M BOARD, COMPLETE
****
(KV-32TS36(CND)/27TS36(CND)/27TS29(CND))

*A-1306-433-A M BOARD, COMPLETE (KV-32TS46(CND))
****

*A-1306-434-A M BOARD, COMPLETE (KV-32TS46(US))
****

<CAPACITOR>

C002	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C003	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C005	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C006	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C007	1-124-903-11	ELECT	1MF	20%	50V
C008	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C009	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C010	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C012	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C013	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C014	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C015	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C016	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C017	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C018	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C019	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C021	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C022	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C023	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C025	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C028	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C029	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C034	1-163-125-00	CERAMIC CHIP	220PF	5%	50V (KV-32TS46)
C035	1-163-125-00	CERAMIC CHIP	220PF	5%	50V (KV-32TS46)
C041	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C043	1-163-159-00	CERAMIC CHIP	12PF	2%	50V
C045	1-124-119-00	ELECT	330MF	20%	16V
C047	1-104-896-91	CERAMIC CHIP	24PF	2%	50V
C049	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C050	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C051	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C052	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C053	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C054	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C055	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C056	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C057	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C058	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C059	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C060	1-124-903-11	ELECT	1MF	20%	50V
C061	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C062	1-124-907-11	ELECT	10MF	20%	50V
C150	1-136-165-00	FILM	0.1MF	5%	50V (KV-32TS46(US)/32TS36(US))
C151	1-136-175-00	FILM	0.068MF	5%	50V (KV-32TS46(US)/32TS36(US))

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REF.NO.	PART NO.	DESCRIPTION				REMARK
C152	1-124-907-11	ELECT	10MF	20%	50V	(KV-32TS46(US)/32TS36(US))
C153	1-137-367-11	FILM	0.0033MF	5%	50V	(KV-32TS46(US)/32TS36(US))
C154	1-163-038-00	CERAMIC CHIP	0.1MF		25V	(KV-32TS46(US)/32TS36(US))
C155	1-124-907-11	ELECT	10MF	20%	50V	(KV-32TS46(US)/32TS36(US))
C156	1-163-135-00	CERAMIC CHIP	560PF	5%	50V	(KV-32TS46(US)/32TS36(US))
C157	1-163-038-00	CERAMIC CHIP	0.1MF		25V	(KV-32TS46(US)/32TS36(US))
C158	1-124-903-11	ELECT	1MF	20%	50V	(KV-32TS46(US)/32TS36(US))
C160	1-124-903-11	ELECT	1MF	20%	50V	
C201	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	
C202	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C203	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V	
C204	1-126-101-11	ELECT	100MF	20%	16V	
C205	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C211	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V	
C212	1-124-902-00	ELECT	0.47MF	20%	50V	
C213	1-124-902-00	ELECT	0.47MF	20%	50V	
C214	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	
C216	1-124-478-11	ELECT	100MF	20%	25V	
C301	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C305	1-124-907-11	ELECT	10MF	20%	50V	
C306	1-124-902-00	ELECT	0.47MF	20%	50V	
C307	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C308	1-163-099-00	CERAMIC CHIP	18PF	5%	50V	
C310	1-124-916-11	ELECT	22MF	20%	25V	
C311	1-124-903-11	ELECT	1MF	20%	50V	
C313	1-163-003-11	CERAMIC CHIP	330PF	10%	50V	
C315	1-124-907-11	ELECT	10MF	20%	50V	(KV-32TS46(US))
C316	1-124-907-11	ELECT	10MF	20%	50V	(KV-32TS46(US))
C317	1-124-907-11	ELECT	10MF	20%	50V	(KV-32TS46(US))
C318	1-136-165-00	FILM	0.1MF	5%	50V	
C319	1-136-165-00	FILM	0.1MF	5%	50V	
C320	1-136-165-00	FILM	0.1MF	5%	50V	
C321	1-124-360-00	ELECT	1000MF	20%	16V	
C322	1-136-153-00	FILM	0.01MF	5%	50V	
C323	1-126-176-11	ELECT	220MF	20%	10V	
C324	1-163-003-11	CERAMIC CHIP	330PF	10%	50V	
C325	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V	
C326	1-136-169-00	FILM	0.22MF	5%	50V	
C327	1-136-169-00	FILM	0.22MF	5%	50V	
C328	1-124-902-00	ELECT	0.47MF	20%	50V	
C329	1-124-903-11	ELECT	1MF	20%	50V	
C330	1-124-907-11	ELECT	10MF	20%	50V	
C331	1-124-907-11	ELECT	10MF	20%	50V	
C332	1-164-489-11	CERAMIC CHIP	0.22MF	10%	16V	
C333	1-163-011-11	CERAMIC CHIP	0.0015MF	10%	50V	
C334	1-124-902-00	ELECT	0.47MF	20%	50V	
C335	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C336	1-124-903-11	ELECT	1MF	20%	50V	
C337	1-124-902-00	ELECT	0.47MF	20%	50V	
C338	1-136-153-00	FILM	0.01MF	5%	50V	
C340	1-124-903-11	ELECT	1MF	20%	50V	
C341	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	
C342	1-137-414-91	FILM	0.0047MF	10%	100V	

REF.NO.	PART NO.	DESCRIPTION	REMARK
		<CONNECTOR>	
CN129	*1-564-523-11	PLUG, CONNECTOR 8P	
CN130	1-573-301-11	CONNECTOR, BOARD TO BOARD 20P	
CN131	*1-691-632-11	CONNECTOR, BOARD TO BOARD 15P	
CN134	*1-564-521-11	PLUG, CONNECTOR 6P	(KV-32TS46)
CN137	1-750-394-11	PIN, CONNECTOR (STAKING) 32P	
CN138	*1-564-511-31	PLUG, CONNECTOR 8P	
CN168	*1-564-505-11	PLUG, CONNECTOR 2P	
		<DIODE>	
D001	8-719-404-46	DIODE MA110	
D002	8-719-404-46	DIODE MA110	
D004	8-719-404-46	DIODE MA110	(KV-32TS46(US))
D005	8-713-300-57	DIODE 1T33	
D006	8-719-110-17	DIODE RD10ESB2	
D007	8-719-110-17	DIODE RD10ESB2	
D008	8-719-110-17	DIODE RD10ESB2	
D009	8-719-110-17	DIODE RD10ESB2	
D150	8-719-404-46	DIODE MA110	(KV-32TS46(US)/32TS36(US))
D201	8-719-404-46	DIODE MA110	
D202	8-719-404-46	DIODE MA110	
D205	8-719-110-17	DIODE RD10ESB2	
D206	8-719-110-17	DIODE RD10ESB2	
D301	8-719-110-17	DIODE RD10ESB2	
D304	8-719-110-17	DIODE RD10ESB2	
		<IC>	
IC101	8-752-841-16	IC CXP80424-SV4397	
IC102	8-759-057-38	IC 24C02AI/P	
IC150	8-759-084-09	IC Z8612812PSC	(KV-32TS46(US)/32TS36(US))
IC201	8-759-090-21	IC TDA8424	
IC202	8-759-983-69	IC UPC358PS	
IC301	8-752-059-67	IC CXA1465AS	
		<JUMPER RESISTOR>	
JR200	1-216-295-00	METAL GLAZE 0 5% 1/10W	
		<COIL>	
L001	1-410-470-11	INDUCTOR 10UH	
L002	1-408-414-00	INDUCTOR 27UH	
L150	1-410-470-11	INDUCTOR 10UH	(KV-32TS46(US)/32TS36(US))
		<TRANSISTOR>	
Q001	8-729-422-36	TRANSISTOR 2SB709A-Q	
Q002	8-729-422-36	TRANSISTOR 2SB709A-Q	
Q004	8-729-422-36	TRANSISTOR 2SB709A-Q	
Q005	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q151	8-729-422-27	TRANSISTOR 2SD601A-Q	(KV-32TS46(US)/32TS36(US))
Q201	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q301	8-729-422-36	TRANSISTOR 2SB709A-Q	
Q302	8-729-422-36	TRANSISTOR 2SB709A-Q	
Q307	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q308	8-729-422-27	TRANSISTOR 2SD601A-Q	

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<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R002	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R003	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R004	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R005	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R006	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R007	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R008	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R009	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R011	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R012	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R013	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R016	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R017	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R018	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R019	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R020	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R021	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R022	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R023	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R025	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R026	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R027	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R028	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R029	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R030	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R031	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R032	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R033	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R034	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R035	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R036	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R037	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R038	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R039	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R040	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R041	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R042	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R043	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R044	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R045	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R046	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R047	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R048	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R049	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R050	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R051	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R052	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R053	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R054	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R055	1-216-033-00	METAL GLAZE	220	5%	1/10W	(KV-32TS46)
R058	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R059	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R061	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R062	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R063	1-216-033-00	METAL GLAZE	220	5%	1/10W	(KV-32TS46)
R064	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R065	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R066	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R067	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R069	1-216-033-00	METAL GLAZE	220	5%	1/10W	(KV-32TS46)
R074	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R075	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R076	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R078	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R079	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R080	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R082	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R083	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R086	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R087	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R089	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R090	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R091	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R092	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R093	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R150	1-216-097-00	METAL GLAZE	100K	5%	1/10W	(KV-32TS46(US)/32TS36(US))
R151	1-216-049-00	METAL GLAZE	1K	5%	1/10W	(KV-32TS46(US)/32TS36(US))
R152	1-216-049-00	METAL GLAZE	1K	5%	1/10W	(KV-32TS46(US)/32TS36(US))
R153	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	(KV-32TS46(US)/32TS36(US))
R154	1-216-041-00	METAL GLAZE	470	5%	1/10W	(KV-32TS46(US)/32TS36(US))
R155	1-216-049-00	METAL GLAZE	1K	5%	1/10W	(KV-32TS46(US)/32TS36(US))
R156	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R157	1-216-073-00	METAL GLAZE	10K	5%	1/10W	(KV-32TS46(US)/32TS36(US))
R158	1-216-073-00	METAL GLAZE	10K	5%	1/10W	(KV-32TS46(US)/32TS36(US))
R159	1-216-049-00	METAL GLAZE	1K	5%	1/10W	(KV-32TS46(US)/32TS36(US))
R160	1-216-049-00	METAL GLAZE	1K	5%	1/10W	(KV-32TS46(US)/32TS36(US))
R161	1-216-049-00	METAL GLAZE	1K	5%	1/10W	(KV-32TS46(US)/32TS36(US))
R162	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	(KV-32TS46(US)/32TS36(US))
R163	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	(KV-32TS46(US)/32TS36(US))
R164	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	(KV-32TS46(US)/32TS36(US))
R165	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	(KV-32TS46(US)/32TS36(US))
R166	1-216-049-00	METAL GLAZE	1K	5%	1/10W	(KV-32TS46(US)/32TS36(US))
R168	1-216-049-00	METAL GLAZE	1K	5%	1/10W	(KV-32TS46(US)/32TS36(US))
R201	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R202	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R203	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R204	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R205	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R206	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R207	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R208	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R209	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R210	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R211	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R212	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R213	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R218	1-216-073-00	METAL GLAZE	10K	5%	1/10W	

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REF.NO.	PART NO.	DESCRIPTION				REMARK
R219	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R220	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R222	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R223	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R301	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R302	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R303	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R306	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R312	1-216-119-00	METAL GLAZE	820K	5%	1/10W	
R313	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R321	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R323	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R324	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R327	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W	
R328	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R329	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R330	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R331	1-216-678-11	METAL CHIP	13K	0.50%	1/10W	
R332	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R333	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R334	1-216-687-11	METAL CHIP	33K	0.50%	1/10W	
R335	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R336	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R337	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R338	1-249-417-11	CARBON	1K	5%	1/4W	F
R339	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R340	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R341	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R342	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R343	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R344	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R345	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R346	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R347	1-249-409-91	CARBON	220	5%	1/4W	F
R348	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R349	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R350	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R351	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R352	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R353	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R354	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R356	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R374	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R375	1-216-033-00	METAL GLAZE	220	5%	1/10W	

<CRYSTAL>

X001	1-579-917-21	VIBRATOR, CRYSTAL
X001	1-579-917-41	VIBRATOR, CRYSTAL
X301	1-567-505-11	OSCILLATOR, CRYSTAL

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*A-1331-264-A C BOARD, COMPLETE
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<CAPACITOR>

C700	1-102-074-00	CERAMIC	0.001MF	10%	50V
C701	1-162-114-00	CERAMIC	0.0047MF		2KV
C702	1-106-375-12	MYLAR	0.022MF	99%	200V
C703	1-106-375-12	MYLAR	0.022MF	99%	200V
C704	1-162-116-00	CERAMIC	680PF	10%	2KV
C705	1-123-946-00	ELECT	4.7MF	20%	250V
C706	1-126-101-11	ELECT	100MF	20%	16V
C707	1-102-129-00	CERAMIC	0.01MF	10%	50V
C711	1-164-083-11	CERAMIC	680PF	10%	50V
C712	1-164-081-11	CERAMIC	470PF	10%	50V
C731	1-164-083-11	CERAMIC	680PF	10%	50V
C732	1-164-081-11	CERAMIC	470PF	10%	50V
C751	1-164-083-11	CERAMIC	680PF	10%	50V
C752	1-164-083-11	CERAMIC	680PF	10%	50V

<CONNECTOR>

CN701	1-695-915-11	TAB (CONTACT)
CN702	*1-508-768-00	PIN, CONNECTOR (5MM PITCH) 6P
CN703	*1-564-511-11	PLUG, CONNECTOR 8P

<DIODE>

D711	8-719-911-19	DIODE 1SS119
D712	8-719-911-19	DIODE 1SS119
D731	8-719-911-19	DIODE 1SS119
D732	8-719-911-19	DIODE 1SS119
D751	8-719-911-19	DIODE 1SS119
D752	8-719-911-19	DIODE 1SS119
D770	8-719-911-19	DIODE 1SS119
D771	8-719-911-19	DIODE 1SS119
D772	8-719-911-19	DIODE 1SS119
D773	8-719-911-19	DIODE 1SS119
D777	8-719-109-68	DIODE RD3.6ESB1
D790	8-719-911-19	DIODE 1SS119
D791	8-719-911-19	DIODE 1SS119
D792	8-719-911-19	DIODE 1SS119
D793	8-719-911-19	DIODE 1SS119
D794	8-719-911-19	DIODE 1SS119
D795	8-719-911-19	DIODE 1SS119

<SOCKET>

J701 *1-541-371-13 SOCKET, PICTURE TUBE

<COIL>

L701	1-410-478-11	INDUCTOR	47UH

<TRANSISTOR>

Q711	8-729-926-73	TRANSISTOR 2SC3271-N
Q712	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q731	8-729-926-73	TRANSISTOR 2SC3271-N
Q732	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q751	8-729-926-73	TRANSISTOR 2SC3271-N
Q752	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q770	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q771	8-729-200-17	TRANSISTOR 2SA1071-O
Q772	8-729-200-17	TRANSISTOR 2SA1071-O
Q773	8-729-200-17	TRANSISTOR 2SA1071-O
Q790	8-729-119-78	TRANSISTOR 2SC2785-HFE

<RESISTOR>

R700	1-247-739-11	CARBON	100	5%	1/2W	
R701	1-244-941-00	CARBON	680K	5%	1/2W	
R702	1-249-496-11	CARBON	100K	5%	1/2W	
R703	1-249-496-11	CARBON	100K	5%	1/2W	
R704	1-216-398-11	METAL OXIDE	5.6	5%	3W	F

C **E**

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REF.NO.	PART NO.	DESCRIPTION				REMARK
R705	1-216-398-11	METAL OXIDE	5.6	5%	3W	F
R706	1-214-921-00	CARBON	220K	5%	1/2W	
R710	1-247-758-11	CARBON	3.3K	5%	1/2W	
R711	1-249-405-11	CARBON	100	5%	1/4W	
R712	1-215-924-00	METAL OXIDE	15K	5%	3W	F
R714	1-249-425-11	CARBON	4.7K	5%	1/4W	
R716	1-249-417-11	CARBON	1K	5%	1/4W	
R717	1-249-393-11	CARBON	10	5%	1/4W	
R718	1-249-413-11	CARBON	470	5%	1/4W	
R730	1-247-758-11	CARBON	3.3K	5%	1/2W	
R731	1-249-405-11	CARBON	100	5%	1/4W	
R732	1-215-924-00	METAL OXIDE	15K	5%	3W	F
R734	1-249-425-11	CARBON	4.7K	5%	1/4W	
R736	1-249-411-11	CARBON	330	5%	1/4W	
R737	1-249-393-11	CARBON	10	5%	1/4W	
R750	1-247-758-11	CARBON	3.3K	5%	1/2W	
R751	1-249-405-11	CARBON	100	5%	1/4W	
R752	1-215-924-00	METAL OXIDE	15K	5%	3W	F
R754	1-249-425-11	CARBON	4.7K	5%	1/4W	
R756	1-249-411-11	CARBON	330	5%	1/4W	
R757	1-249-393-11	CARBON	10	5%	1/4W	
R770	1-249-433-11	CARBON	22K	5%	1/4W	
R771	1-249-409-91	CARBON	220	5%	1/4W	F
R772	1-249-409-91	CARBON	220	5%	1/4W	F
R773	1-249-409-91	CARBON	220	5%	1/4W	F
R774	1-249-437-11	CARBON	47K	5%	1/4W	
R775	1-249-417-11	CARBON	1K	5%	1/4W	F
R776	1-249-409-91	CARBON	220	5%	1/4W	F
R790	1-249-413-11	CARBON	470	5%	1/4W	
R791	1-249-412-11	CARBON	390	5%	1/4W	
R792	1-249-424-11	CARBON	3.9K	5%	1/4W	
R794	1-249-424-11	CARBON	3.9K	5%	1/4W	
R796	1-249-424-11	CARBON	3.9K	5%	1/4W	
R798	1-249-437-11	CARBON	47K	5%	1/4W	
R799	1-249-437-11	CARBON	47K	5%	1/4W	

<VARIABLE RESISTOR>

RV701 1-241-625-21 RES, ADJ, METAL FILM 10K
RV702 1-230-641-11 RES, ADJ, METAL GLAZE 2.2M

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*A-1341-622-A B BOARD, COMPLETE (KV-32TS36/32TS46)
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*1-508-765-00 PIN, CONNECTOR (5MM PITCH) 3P

<CAPACITOR>

C1501	1-126-103-11	ELECT	470MF	20%	16V
C1502	1-137-372-11	FILM	0.022MF	5%	50V
C1503	1-102-234-00	CERAMIC	270PF	10%	500V
C1504	1-136-165-00	FILM	0.1MF	5%	50V
C1505	1-124-907-11	ELECT	10MF	20%	50V
C1507	1-124-907-11	ELECT	10MF	20%	50V
C1509	1-136-165-00	FILM	0.1MF	5%	50V
C1510	1-137-370-11	FILM	0.01MF	5%	50V
C1516	1-136-165-00	FILM	0.1MF	5%	50V
C1519	1-136-104-00	FILM	0.16MF	5%	200V
C1522	1-124-360-00	ELECT	1000MF	20%	16V
C1523	1-136-177-00	FILM	1MF	5%	50V
C1524	1-124-927-11	ELECT	4.7MF	20%	50V
C1529	1-124-907-11	ELECT	10MF	20%	50V
C1530	1-124-907-11	ELECT	10MF	20%	50V
C1532	1-124-477-11	ELECT	47MF	20%	16V
C1533	1-124-916-11	ELECT	22MF	20%	25V
C1542	1-124-477-11	ELECT	47MF	20%	16V
C1550	1-136-756-11	FILM	0.24MF	5%	200V

<CONNECTOR>

CN122	*1-573-299-11	CONNECTOR, BOARD TO BOARD 10P	
CN123	*1-573-299-11	CONNECTOR, BOARD TO BOARD 10P	

<DIODE>

D1501	8-719-911-19	DIODE 1SS119
D1502	8-719-801-35	THYRISTOR SHOR3D42
D1503	8-719-980-78	DIODE ERA83-006
D1504	8-719-300-33	DIODE RU-3AM
D1505	8-719-911-19	DIODE 1SS119
D1506	8-719-911-19	DIODE 1SS119
D1507	8-719-911-19	DIODE 1SS119
D1508	8-719-110-17	DIODE RD10ESB2
D1509	8-719-110-17	DIODE RD10ESB2
D1510	8-719-911-19	DIODE 1SS119
D1513	8-719-300-33	DIODE RU-3AM
D1515	8-719-911-19	DIODE 1SS119
D1516	8-719-913-44	DIODE ERA82-004
D1517	8-719-911-19	DIODE 1SS119

<IC>

IC1501	8-752-052-88	IC CXA1526P
IC1502	8-759-982-10	IC RC7809FA
IC1504	8-759-135-80	IC UPC358C

<COIL>

L1502	1-459-592-11	COIL (WITH CORE) (PMC)
L1504	1-459-474-11	COIL (WITH CORE)

<TRANSISTOR>

Q1501	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q1502	8-729-140-96	TRANSISTOR 2SD774-34
Q1503	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q1506	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q1507	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q1508	8-729-140-97	TRANSISTOR 2SB734-34
Q1509	8-729-140-97	TRANSISTOR 2SB734-34
Q1511	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q1514	8-729-209-15	TRANSISTOR 2SD2012
Q1519	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q1520	8-729-119-78	TRANSISTOR 2SC2785-HFE

<RESISTOR>

R1501	1-249-409-11	CARBON	220	5%	1/4W
R1502	1-249-409-11	CARBON	220	5%	1/4W
R1503	1-249-435-11	CARBON	33K	5%	1/4W
R1504	1-249-429-11	CARBON	10K	5%	1/4W
R1505	1-249-421-11	CARBON	2.2K	5%	1/4W
R1506	1-249-423-11	CARBON	3.3K	5%	1/4W
R1507	1-249-410-11	CARBON	270	5%	1/4W
R1508	1-249-437-11	CARBON	47K	5%	1/4W
R1509	1-249-429-11	CARBON	10K	5%	1/4W
R1510	1-215-461-00	METAL	47K	1%	1/4W

E D

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REF.NO.	PART NO.	DESCRIPTION				REMARK
R1511	1-216-379-11	METAL OXIDE	6.8	5%	2W	F
R1513	1-249-423-11	CARBON	3.3K	5%	1/4W	
R1514	1-247-885-00	CARBON	180K	5%	1/4W	
R1515	1-215-905-11	METAL OXIDE	10	5%	3W	F
R1519	1-249-417-11	CARBON	1K	5%	1/4W	
R1520	1-249-417-11	CARBON	1K	5%	1/4W	
R1522	1-249-417-11	CARBON	1K	5%	1/4W	
R1527	1-249-417-11	CARBON	1K	5%	1/4W	F
R1528	1-249-438-11	CARBON	56K	5%	1/4W	
R1529	1-249-434-11	CARBON	27K	5%	1/4W	
R1530	1-249-432-11	CARBON	18K	5%	1/4W	
R1533	1-249-427-11	CARBON	6.8K	5%	1/4W	
R1534	1-249-424-11	CARBON	3.9K	5%	1/4W	
R1535	1-249-425-11	CARBON	4.7K	5%	1/4W	
R1536	1-215-857-11	METAL OXIDE	10	5%	1W	F
R1537	1-249-404-00	CARBON	82	5%	1/4W	
R1538	1-216-379-11	METAL OXIDE	6.8	5%	2W	F
R1541	1-249-441-11	CARBON	100K	5%	1/4W	
R1543	1-249-414-11	CARBON	560	5%	1/4W	
R1546	1-215-885-00	METAL OXIDE	68	5%	2W	F
R1552	1-249-426-11	CARBON	5.6K	5%	1/4W	
R1554	1-249-393-11	CARBON	10	5%	1/4W	
R1556	1-249-438-11	CARBON	56K	5%	1/4W	
R1559	1-249-429-11	CARBON	10K	5%	1/4W	
R1564	1-249-435-11	CARBON	33K	5%	1/4W	
R1568	1-247-891-00	CARBON	330K	5%	1/4W	
R1569	1-249-413-11	CARBON	470	5%	1/4W	
R1578	1-249-423-11	CARBON	3.3K	5%	1/4W	
R1582	1-249-411-11	CARBON	330	5%	1/4W	
R1583	1-249-421-11	CARBON	2.2K	5%	1/4W	
R1585	1-249-441-11	CARBON	100K	5%	1/4W	
R1586	1-247-891-00	CARBON	330K	5%	1/4W	

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*A-1346-112-A D BOARD, COMPLETE (KV-27TS36/27TS32 **********/27TS29)

*A-1346-129-A D BOARD, COMPLETE (KV-32TS46/32TS36) **********

1-533-223-11 CLIP, FUSE
4-382-854-11 SCREW (M3X10), P, SW (+)

<CAPACITOR>

C501	1-124-557-11	ELECT	1000MF	20%	25V
C502	1-162-131-11	CERAMIC	220PF	10%	2KV
C503	1-124-557-11	ELECT	1000MF	20%	25V
C504	1-137-366-11	FILM	0.0022MF	5%	50V
C505	1-124-916-11	ELECT	22MF	20%	25V
C506	1-124-929-11	ELECT	22MF	20%	100V
C507	1-124-046-00	ELECT	10MF	20%	160V
C509	1-124-916-11	ELECT	22MF	20%	25V
C511	1-123-024-21	ELECT	33MF		160V
C512	1-102-212-00	CERAMIC	820PF	10%	500V
C513	1-102-212-00	CERAMIC	820PF	10%	500V
C514	1-102-244-00	CERAMIC	220PF	10%	500V
C515	1-137-416-11	FILM	0.01MF	10%	100V
C517	1-162-116-00	CERAMIC	680PF	10%	2KV
C518	1-162-116-00	CERAMIC	680PF	10%	2KV
C519 ⚠	1-137-324-11	FILM	0.02MF	3%	2KV
C520 ⚠	1-162-134-91	CERAMIC	470PF	10%	2KV
C521 ⚠	1-136-316-91	FILM	0.056MF	5%	630V
C522	1-106-383-00	MYLAR	0.047MF	99%	200V
C523	1-102-002-00	CERAMIC	680PF	10%	500V
C524	1-102-212-00	CERAMIC	820PF	10%	500V
C525	1-124-902-00	ELECT	0.47MF	20%	50V
C526	1-106-395-00	MYLAR	0.15MF	10%	200V
C527	1-124-341-00	ELECT	1MF	20%	200V
C528	1-136-113-00	FILM	2MF	5%	200V
C529	1-137-410-11	FILM	0.001MF	10%	100V
C530	1-104-770-11	FILM	0.62MF	5%	200V
C530	1-104-844-11	CAP, FILM (S)	0.62MF		
C531	1-124-477-11	ELECT	47MF	20%	25V
C532	1-136-165-00	FILM	0.1MF	5%	50V
C533	1-124-927-11	ELECT	4.7MF	20%	50V
C534	1-136-161-00	FILM	0.047MF	5%	50V
C535	1-124-911-11	ELECT	220MF	20%	50V
C536	1-137-421-91	FILM	0.068MF	10%	100V
C538	1-136-161-00	FILM	0.047MF	5%	50V
C540	1-137-366-11	FILM	0.0022MF	5%	50V
C541	1-137-366-11	FILM	0.0022MF	5%	50V
C542	1-130-481-00	FILM	0.0068MF	5%	50V
C545	1-124-927-11	ELECT	4.7MF	20%	50V
C547	1-164-079-11	CERAMIC	330PF	10%	50V
C548 ⚠	1-162-116-91	CERAMIC	680PF	10%	2KV
C550	1-106-387-00	MYLAR	0.068MF	10%	200V
C553	1-164-079-11	CERAMIC	330PF	10%	50V
C561	1-162-815-11	CERAMIC	47PF	5%	500V
C595	1-123-932-00	ELECT	4.7MF	20%	160V
C598	1-124-342-00	ELECT	3.3MF	20%	160V
C600	1-124-907-11	ELECT	10MF	20%	50V
C601 ⚠	1-136-311-91	FILM	0.47MF	20%	125V
C602 ⚠	1-136-311-91	FILM	0.47MF	20%	125V
C603 ⚠	1-136-311-91	FILM	0.47MF	20%	125V
C604 ⚠	1-162-378-81	CERAMIC	0.0047MF	20%	400V
C607	1-104-757-11	ELECT	470MF	20%	200V
C608	1-104-757-11	ELECT	470MF	20%	200V
C609	1-136-169-00	FILM	0.22MF	5%	50V
C610	1-136-169-00	FILM	0.22MF	5%	50V
C611	1-136-169-00	FILM	0.22MF	5%	50V
C612	1-136-169-00	FILM	0.22MF	5%	50V
C613	1-164-625-11	CERAMIC	680PF	10%	500V
C614	1-164-625-11	CERAMIC	680PF	10%	500V
C616	1-124-907-11	ELECT	10MF	20%	50V
C617	1-124-618-11	ELECT	2200MF	20%	35V
C618	1-124-557-11	ELECT	1000MF	20%	25V
C619	1-124-360-00	ELECT	1000MF	20%	16V
C620	1-164-644-11	CERAMIC	330PF	10%	500V
C621	1-126-356-11	ELECT	220MF	20%	160V
C623	1-162-117-00	CERAMIC	100PF	10%	500V
C624	1-136-487-81	FILM	0.015MF	5%	50V
C625	1-129-744-91	FILM	0.027MF	10%	400V
C626	1-124-478-11	ELECT	100MF	20%	25V
C627	1-124-443-00	ELECT	100MF	20%	10V
C628 ⚠	1-164-437-91	CERAMIC	470PF	20%	400V
C634	1-165-127-11	CERAMIC	470PF	10%	500V
C635	1-124-477-11	ELECT	47MF	20%	16V
C636	1-137-374-11	FILM	0.047MF	5%	50V
C637	1-124-916-11	ELECT	22MF	20%	25V
C640	1-124-902-00	ELECT	0.47MF	20%	50V
C641	1-124-443-00	ELECT	100MF	20%	10V
C642	1-137-217-11	FILM	0.01MF	5%	1.25KV
C643	1-137-218-11	FILM	0.012MF	5%	1.25KV
C645	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C646	1-126-101-11	ELECT	100MF	20%	16V
C647	1-124-916-11	ELECT	22MF	20%	25V
C684	1-124-907-11	ELECT	10MF	20%	50V

D

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The components identified by shading and mark ⚠ are critical for safety
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REF.NO.	PART NO.	DESCRIPTION				REMARK
C695	1-124-907-11	ELECT	10MF	20%	50V	
C2205	1-124-925-11	ELECT	2.2MF	20%	50V	
C2208	1-124-925-11	ELECT	2.2MF	20%	50V	
C2210	1-124-120-11	ELECT	220MF	20%	25V	
C2211	1-124-477-11	ELECT	47MF	20%	25V	
C2212	1-124-120-11	ELECT	220MF	20%	25V	
C2213	1-136-173-00	FILM	0.47MF	5%	50V	
C2215	1-136-169-00	FILM	0.22MF	5%	50V	
C2216	1-124-480-11	ELECT	470MF	20%	25V	
C2217	1-136-169-00	FILM	0.22MF	5%	50V	
C2218	1-124-557-11	ELECT	1000MF	20%	25V	
C2219	1-124-557-11	ELECT	1000MF	20%	25V	
C2220	1-124-925-11	ELECT	2.2MF	20%	50V	

<CONNECTOR>

CN104	*1-573-979-11	CONNECTOR, BOARD TO BOARD 11P	
CN105	*1-508-768-00	PIN, CONNECTOR (5MM PITCH) 6P	
CN107	*1-580-798-11	CONNECTOR PIN (DY) 6P	
CN108	1-573-296-11	CONNECTOR, BOARD TO BOARD 10P	(KV-32TS46/32TS36)
CN109	1-573-296-11	CONNECTOR, BOARD TO BOARD 10P	(KV-32TS46/32TS36)
CN112	*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P	
CN113	*1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P	
CN114	*1-580-843-11	PIN, CONNECTOR (POWER)	
CN115	1-573-298-11	CONNECTOR, BOARD TO BOARD 20P	
CN116	*1-691-616-11	CONNECTOR, BOARD TO BOARD 15P	
CN117	*1-573-978-11	CONNECTOR, BOARD TO BOARD 11P	

<DIODE>

D501	8-719-976-64	DIODE RGP02-17
D502	8-719-979-85	DIODE EGP20G
D503	8-719-979-85	DIODE EGP20G
D504	*8-719-302-44	DIODE SL12-Y1
D505	8-719-936-84	DIODE RGP10GPKG3
D506	8-719-945-80	DIODE ERC06-15S
D507	8-719-945-80	DIODE ERC06-15S
D508	8-719-900-26	DIODE ERD29-08J
D509	8-719-936-84	DIODE RGP10GPKG3
D510	8-719-908-03	DIODE GP08D
D511	8-719-908-03	DIODE GP08D
D512	8-719-109-84	DIODE RD5.1ESB1
D513	8-719-908-03	DIODE GP08D
D514	8-719-911-19	DIODE 1SS119
D515	8-719-911-19	DIODE 1SS119
D601	8-719-911-19	DIODE 1SS119
D602	*8-719-510-63	DIODE D4SB60L-F
D603	8-719-500-69	DIODE S3V10SS
D605	8-719-500-69	DIODE S3V10SS
D607	8-719-510-02	DIODE D1NS4
D608	8-719-510-02	DIODE D1NS4
D609	8-719-510-02	DIODE D1NS4
D610	8-719-510-02	DIODE D1NS4
D611	8-719-510-02	DIODE D1NS4
D612	8-719-031-80	DIODE D5SC4MR
D613	8-719-022-97	DIODE D2S4MF
D614	8-719-110-33	DIODE RD12ESB3
D615	8-719-027-43	DIODE S2L20UF
D616	8-719-027-43	DIODE S2L20UF
D617	8-719-027-43	DIODE S2L20UF
D618	8-719-027-43	DIODE S2L20UF
D619	8-719-510-02	DIODE D1NS4
D622	8-719-911-19	DIODE 1SS119
D623	8-719-911-19	DIODE 1SS119
D624	8-719-911-19	DIODE 1SS119
D626	8-719-510-48	DIODE D1N20R
D627	8-719-510-48	DIODE D1N20R
D628	8-719-911-19	DIODE 1SS119
D633	8-719-110-09	DIODE RD8.2ESB3
D634	8-719-911-19	DIODE 1SS119
D635	8-719-911-19	DIODE 1SS119
D636	8-719-510-48	DIODE D1N20R
D637	8-719-911-19	DIODE 1SS119
D638	8-719-911-19	DIODE 1SS119

<FUSE>

F601	*1-532-748-11	FUSE, GLASS TUBE (6.3A/125V)

<FERRITE BEAD>

FB501	1-412-911-11	INDUCTOR, FERRITE BEAD
FB502	1-412-911-11	INDUCTOR, FERRITE BEAD
FB601	1-412-911-11	INDUCTOR, FERRITE BEAD
FB602	1-412-911-11	INDUCTOR, FERRITE BEAD
FB603	1-412-911-11	INDUCTOR, FERRITE BEAD
FB604	1-412-911-11	INDUCTOR, FERRITE BEAD
FB605	1-412-911-11	INDUCTOR, FERRITE BEAD
FB606	1-412-911-11	INDUCTOR, FERRITE BEAD
FB613	1-412-911-11	INDUCTOR, FERRITE BEAD
FB614	1-412-911-11	INDUCTOR, FERRITE BEAD

<IC>

IC501	8-759-980-58	IC TDA8172
IC504	8-759-103-93	IC UPC393C

<POWER MODULE>

IC601	1-810-051-11	POWER MODULE DM-48

<IC>

IC602	8-759-805-37	IC L78LR05D-MA
IC604	8-759-924-12	IC LM7805CT
IC605	8-759-701-79	IC LM7812CT
IC606	8-759-982-10	IC RC7809FA
IC610	8-759-150-61	IC UPC78L05T
IC2200	8-759-980-43	IC TDA2009A

<COIL>

L502	1-421-465-00	COIL, FERRITE CHOKE 68UH	
L503	1-412-524-11	INDUCTOR	8.2UH
L504	1-410-669-31	INDUCTOR	33UH
L505	1-459-104-00	COIL, WITH CORE	
L506	1-422-613-11	COIL, AIR CORE	
L508	1-412-553-11	INDUCTOR	3.3MMH
L509	*1-460-173-21	COIL, HORIZONTAL LINEARITY (HLC)	
L510	1-406-607-11	COIL, CHOKE 15MMH	
L513	1-412-524-11	INDUCTOR	8.2UH

The components identified by shading and mark ⚠ are critical for safety
Replace only with part number specified.

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Ne les remplacer que par une piece portant le numero specifie

• The components identified by ⧓ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation
Should replacement be required, replace only with the value originally used

REF.NO.	PART NO.	DESCRIPTION				REMARK
		<PROTECTOR MODULE>				
PM501	1-810-061-11	PROTECTOR MODULE PM-39 (KV-27TS36/27TS32/27TS29)				
PM501	1-810-061-21	PROTECTOR MODULE PM-39 (KV-32TS46/32TS36)				
		<IC LINK>				
PS2201	1-533-675-91	LINK, IC				
		<TRANSISTOR>				
Q502	8-729-119-80	TRANSISTOR 2SC2688-LK				
Q503	8-729-809-29	TRANSISTOR 2SC4159-E				
Q505	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q591	8-729-016-32	TRANSISTOR 2SC4927-01				
Q601	8-729-019-51	TRANSISTOR 2SC4834MNP				
Q602	8-729-019-51	TRANSISTOR 2SC4834MNP				
Q603	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q604	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q605	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q611	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q613	8-729-924-90	TRANSISTOR 2SB1370-EF				
Q614	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q2202	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q2203	8-729-119-76	TRANSISTOR 2SA1175-HFE				
		<RESISTOR>				
R501	1-249-378-11	CARBON	0.56	5%	1/4W	F
R503	1-215-862-11	METAL OXIDE	68	5%	1W	F
R504	1-215-872-11	METAL OXIDE	3.3K	5%	1W	F
R505	1-249-377-11	CARBON	0.47	5%	1/4W	F
R506	1-215-886-11	METAL OXIDE	100	5%	2W	F
R507	1-249-429-11	CARBON	10K	5%	1/4W	
R508	1-249-425-11	CARBON	4.7K	5%	1/4W	
R509	1-249-389-11	CARBON	4.7	5%	1/4W	F
⧓R511 ⚠		CARBON			1/4W	
R512	1-249-389-11	CARBON	4.7	5%	1/4W	F
R513	1-216-393-00	METAL OXIDE	2.2	5%	3W	F
R514	1-249-429-11	CARBON	10K	5%	1/4W	
R515	1-216-363-00	METAL OXIDE	0.33	5%	2W	F
R516	1-249-401-11	CARBON	47	5%	1/4W	
R517	1-215-916-00	METAL OXIDE	680	5%	3W	F
R518	1-215-916-00	METAL OXIDE	680	5%	3W	F
R519	1-249-426-11	CARBON	5.6K	5%	1/4W	F
R520	1-249-423-11	CARBON	3.3K	5%	1/4W	
R521	1-249-411-11	CARBON	330	5%	1/4W	
R522	1-215-886-11	METAL OXIDE	100	5%	2W	F
R523	1-215-862-11	METAL OXIDE	68	5%	1W	F
⧓R524 ⚠		CARBON			1/4W	
R526	1-247-887-00	CARBON	220K	5%	1/4W	
R527	1-215-861-00	METAL OXIDE	47	5%	1W	F
R528	1-260-326-71	CARBON	680	5%	1/2W	
R530	1-215-445-00	METAL	10K	1%	1/4W	
R531	1-247-903-91	CARBON	1M	5%	1/4W	
R532	1-215-446-00	METAL	11K	1%	1/4W	
R534	1-249-385-11	CARBON	2.2	5%	1/4W	F
R535	1-216-453-00	METAL OXIDE	270	5%	2W	F
R536	1-249-389-11	CARBON	4.7	5%	1/4W	F
R539	1-215-459-00	METAL	39K	1%	1/4W	
R543	1-249-419-11	CARBON	1.5K	5%	1/4W	
R546	1-249-431-11	CARBON	15K	5%	1/4W	
R547	1-247-883-00	CARBON	150K	5%	1/4W	
R550	1-249-429-11	CARBON	10K	5%	1/4W	
R551	1-249-429-11	CARBON	10K	5%	1/4W	
R554	1-216-371-00	METAL OXIDE	1.5	5%	2W	F
R556	1-249-411-11	CARBON	330	5%	1/4W	
R557	1-249-415-11	CARBON	680	5%	1/4W	F
R561	1-249-429-11	CARBON	10K	5%	1/4W	
R562	1-215-437-00	METAL	4.7K	1%	1/4W	
R563	1-249-429-11	CARBON	10K	5%	1/4W	
R564	1-249-433-11	CARBON	22K	5%	1/4W	
R566	1-249-435-11	CARBON	33K	5%	1/4W	
R580	1-249-411-11	CARBON	330	5%	1/4W	
R601 ⚠	1-202-888-91	SOLID	2.2Ω	20%	1/2W	
R602 ⚠	1-202-888-91	SOLID	2.2Ω	20%	1/2W	
R603	1-249-419-11	CARBON	1.5K	5%	1/4W	
R605	1-247-893-11	CARBON	390K	5%	1/4W	
R606	1-247-893-11	CARBON	390K	5%	1/4W	
R607 ⚠	1-202-933-81	FUSIBLE	0.1	10%	1/2W	F
R608	1-215-860-11	METAL OXIDE	33	5%	1W	F
R609	1-216-352-11	METAL OXIDE	1.8	5%	1W	F
R610	1-216-352-11	METAL OXIDE	1.8	5%	1W	F
R611	1-216-468-91	METAL OXIDE	82K	5%	2W	F
R612	1-216-468-91	METAL OXIDE	82K	5%	2W	F
R613	1-215-860-11	METAL OXIDE	33	5%	1W	F
R614	1-215-860-11	METAL OXIDE	33	5%	1W	F
R615	1-249-421-11	CARBON	2.2K	5%	1/4W	
R616	1-249-417-11	CARBON	1K	5%	1/4W	
R617	1-249-377-11	CARBON	0.47	5%	1/4W	F
R618	1-249-377-11	CARBON	0.47	5%	1/4W	F
R619	1-249-377-11	CARBON	0.47	5%	1/4W	F
R621	1-249-377-11	CARBON	0.47	5%	1/4W	F
R622	1-249-377-11	CARBON	0.47	5%	1/4W	F
R623	1-249-377-11	CARBON	0.47	5%	1/4W	F
R624	1-249-377-11	CARBON	0.47	5%	1/4W	F
R625	1-249-377-11	CARBON	0.47	5%	1/4W	F
R627	1-249-377-11	CARBON	0.47	5%	1/4W	F
R628	1-249-377-11	CARBON	0.47	5%	1/4W	F
R629	1-249-388-11	CARBON	3.9	5%	1/4W	F
R630	1-215-857-11	METAL OXIDE	10	5%	1W	F
R632	1-249-417-11	CARBON	1K	5%	1/4W	F
R633	1-249-405-11	CARBON	100	5%	1/4W	F
R635	1-249-413-11	CARBON	470	5%	1/4W	F
R636	1-249-383-11	CARBON	1.5	5%	1/4W	F
R637	1-249-421-11	CARBON	2.2K	5%	1/4W	
R638	1-249-423-11	CARBON	3.3K	5%	1/4W	
R639	1-249-423-11	CARBON	3.3K	5%	1/4W	
R640 ⚠	1-202-893-91	SOLID	8.2Ω	20%	1/2W	
R643	1-216-379-11	METAL OXIDE	6.8	5%	2W	F
R644 ⚠	1-212-853-81	FUSIBLE	6.8	5%	1/4W	F
R645	1-249-377-11	CARBON	0.47	5%	1/4W	F
R646	1-249-429-11	CARBON	10K	5%	1/4W	
R647	1-249-433-11	CARBON	22K	5%	1/4W	
R648	1-249-414-11	CARBON	560	5%	1/4W	
R649	1-216-431-11	METAL OXIDE	560	5%	1W	F
R650	1-249-405-11	CARBON	100	5%	1/4W	F
R651 ⚠	1-212-954-81	FUSIBLE	6.8	5%	1/2W	F
R652 ⚠	1-212-954-81	FUSIBLE	6.8	5%	1/2W	F
R653	1-249-381-11	CARBON	1	5%	1/4W	
R654	1-216-385-11	METAL OXIDE	0.47	5%	3W	F
R655	1-249-417-11	CARBON	1K	5%	1/4W	F
R656	1-249-381-11	CARBON	1	5%	1/4W	
R657	1-249-417-11	CARBON	1K	5%	1/4W	
R658	1-249-389-11	CARBON	4.7	5%	1/4W	F

D **H**

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REF.NO.	PART NO.	DESCRIPTION				REMARK
R659	1-247-883-00	CARBON	150K	5%	1/4W	
R660	1-249-433-11	CARBON	22K	5%	1/4W	
R661	1-249-406-11	CARBON	120	5%	1/4W	
R690	1-249-423-11	CARBON	3.3K	5%	1/4W	
R691	1-249-423-11	CARBON	3.3K	5%	1/4W	
R2209	1-249-427-11	CARBON	6.8K	5%	1/4W	
R2210	1-249-435-11	CARBON	33K	5%	1/4W	
R2211	1-249-427-11	CARBON	6.8K	5%	1/4W	
R2212	1-249-435-11	CARBON	33K	5%	1/4W	
R2215	1-249-425-11	CARBON	4.7K	5%	1/4W	
R2216	1-249-437-11	CARBON	47K	5%	1/4W	
R2217	1-249-435-11	CARBON	33K	5%	1/4W	
R2218	1-249-441-11	CARBON	100K	5%	1/4W	
R2219	1-249-413-11	CARBON	470	5%	1/4W	
R2220	1-249-430-11	CARBON	12K	5%	1/4W	
R2221	1-249-430-11	CARBON	12K	5%	1/4W	
R2222	1-249-398-11	CARBON	27	5%	1/4W	
R2223	1-249-418-11	CARBON	1.2K	5%	1/4W	
R2224	1-249-418-11	CARBON	1.2K	5%	1/4W	
R2225	1-249-398-11	CARBON	27	5%	1/4W	
R2226	1-249-385-11	CARBON	2.2	5%	1/4W	F
R2227	1-249-385-11	CARBON	2.2	5%	1/4W	F
R2228	1-249-421-11	CARBON	2.2K	5%	1/4W	
R2229	1-249-421-11	CARBON	2.2K	5%	1/4W	
		<RELAY>				
RY601	1-515-684-22	RELAY				
RY602	1-515-516-00	RELAY				
		<SWITCH>				
S501	1-572-707-11	SWITCH, LEVER				
S502	1-572-707-11	SWITCH, LEVER				
		<TRANSFORMER>				
T501	1-433-146-11	TRANSFORMER ASSY, FLYBACK (KX-2604A3)				
T502	1-437-195-14	TRANSFORMER, HORIZONTAL DRIVE (HOT)				
T503	1-424-545-22	TRANSFORMER, FERRITE (PWT)				
T601	1-423-593-11	TRANSFORMER, LINE FILTER (LPT)				
T602	1-424-220-21	TRANSFORMER, LINE FILTER (LPT)				
T603	1-423-563-11	TRANSFORMER, CONVERTER DRIVE (CDT)				
T604	1-423-615-11	TRANSFORMER, CONVERTER (PIT)				
T605	1-423-582-11	TRANSFORMER, FERRITE (SBT)				
		<THERMISTOR>				
THP601	1-808-539-11	THERMISTOR, POSITIVE				
		<VARISTOR>				
VDR601	1-807-288-11	VARISTOR				
VDR602	1-810-053-21	VARISTOR				
VDR603	1-810-053-21	VARISTOR				
**********						
	*1-646-717-11	H BOARD				
		*******				
		<CAPACITOR>				
C1001	1-124-916-11	ELECT	22MF	20%	25V (KV-32TS46/32TS36/27TS36/27TS32)	
C1002	1-124-903-11	ELECT	1MF	20%	50V (KV-32TS46/32TS36/27TS36/27TS32)	
C1003	1-124-903-11	ELECT	1MF	20%	50V (KV-32TS46/32TS36/27TS36/27TS32)	
C1004	1-124-122-11	ELECT	100MF	20%	50V	
		<CONNECTOR>				
CN154	*1-564-520-11	PLUG, CONNECTOR 5P (KV-32TS46/32TS36/27TS36/27TS32)				
CN155	*1-564-523-31	PLUG, CONNECTOR 8P				
		<DIODE>				
D1004	1-810-039-11	LED UNIT				
		<IC>				
IC1001	8-741-618-11	IC SBX1618-51				
		<JACK>				
J1001	1-695-585-11	JACK BLOCK, PIN (L TYPE) 3P (KV-32TS46/32TS36/27TS36/27TS32)				
		<RESISTOR>				
R1001	1-247-804-11	CARBON	75	5%	1/4W (KV-32TS46/32TS36/27TS36/27TS32)	
R1002	1-249-425-11	CARBON	4.7K	5%	1/4W (KV-32TS46/32TS36/27TS36/27TS32)	
R1003	1-216-113-00	METAL GLAZE	470K	5%	1/10W (KV-32TS46/32TS36/27TS36/27TS32)	
R1004	1-249-425-11	CARBON	4.7K	5%	1/4W (KV-32TS46/32TS36/27TS36/27TS32)	
R1005	1-216-113-00	METAL GLAZE	470K	5%	1/10W (KV-32TS46/32TS36/27TS36/27TS32)	
R1007	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R1008	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1009	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1010	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R1011	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1012	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R1013	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R1014	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R1015	1-216-033-00	METAL GLAZE	220	5%	1/10W	
		<SWITCH>				
S1001	1-571-532-21	SWITCH, TACTIL				
S1002	1-571-532-21	SWITCH, TACTIL				
S1003	1-571-532-21	SWITCH, TACTIL				
S1004	1-571-532-21	SWITCH, TACTIL				
S1005	1-571-532-21	SWITCH, TACTIL				
S1006	1-571-532-21	SWITCH, TACTIL				
S1007	1-573-533-23	SWITCH, TACTIL				
**********						

REF.NO.	PART NO.	DESCRIPTION	REMARK
	*A-1394-415-A	UA BOARD, COMPLETE(KV-32TS36/27TS36) **********	
	*A-1394-435-A	UA BOARD, COMPLETE(KV-32TS46) **********	
	*A-1394-437-A	UA BOARD, COMPLETE(KV-27TS29) **********	
	*A-1394-441-A	UA BOARD, COMPLETE(KV-27TS32) **********	
		<CAPACITOR>	
C401	1-163-031-11	CERAMIC CHIP 0.01MF 50V	(KV-32TS46/32TS36/27TS32)
C402	1-124-916-11	ELECT 22MF 20% 25V	
C405	1-124-916-11	ELECT 22MF 20% 25V	(KV-32TS46/32TS36/27TS32)
C406	1-124-903-11	ELECT 1MF 20% 50V	(KV-32TS46/32TS36/27TS32)
C407	1-124-903-11	ELECT 1MF 20% 50V	(KV-32TS46/32TS36/27TS32)
C408	1-124-916-11	ELECT 22MF 20% 25V	(KV-32TS46/32TS36/27TS32)
C409	1-124-903-11	ELECT 1MF 20% 50V	
C410	1-124-903-11	ELECT 1MF 20% 50V	
C411	1-124-478-11	ELECT 100MF 20% 25V	(KV-27TS32/27TS29)
C412	1-124-916-11	ELECT 22MF 20% 25V	
C413	1-124-907-11	ELECT 10MF 20% 50V	
C414	1-124-499-11	ELECT 1MF 20% 50V	
C415	1-124-499-11	ELECT 1MF 20% 50V	
C416	1-124-907-11	ELECT 10MF 20% 50V	
C417	1-124-902-00	ELECT 0.47MF 20% 50V	
C418	1-124-902-00	ELECT 0.47MF 20% 50V	
C419	1-124-477-11	ELECT 47MF 20% 16V	
C420	1-163-031-11	CERAMIC CHIP 0.01MF 50V	(KV-32TS46/32TS36/27TS32)
C421	1-124-916-11	ELECT 22MF 20% 25V	(KV-32TS46/32TS36/27TS32)
C430	1-124-499-11	ELECT 1MF 20% 50V	(KV-32TS46)
C431	1-124-499-11	ELECT 1MF 20% 50V	(KV-32TS46)
C432	1-124-916-11	ELECT 22MF 20% 25V	(KV-32TS46)
C433	1-124-482-11	ELECT 33MF 20% 25V	(KV-32TS46/32TS36/27TS32)
C434	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	(KV-32TS46/32TS36/27TS32)
C440	1-124-907-11	ELECT 10MF 20% 50V	(KV-32TS46/32TS36/27TS32)
C441	1-124-477-11	ELECT 47MF 20% 16V	
C442	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	(KV-32TS46/32TS36/27TS32)
C462	1-126-101-11	ELECT 100MF 20% 16V	
		<FILTER BLOCK>	
CM402	1-466-912-21	FILTER BLOCK, COMB	
		<CONNECTOR>	
CN141	*1-564-520-11	PLUG, CONNECTOR 5P	(KV-32TS46/32TS36/27TS36/27TS32)
CN143	1-750-395-11	SOCKET, CONNECTOR 32P	
CN144	*1-564-521-11	PLUG, CONNECTOR 6P	(KV-32TS46)
CN146	1-573-300-11	CONNECTOR, BOARD TO BOARD 18P	(KV-32TS46/32TS36/27TS32)
CN147	1-750-395-11	SOCKET, CONNECTOR 32P	
CN148	*1-564-517-11	PLUG, CONNECTOR 2P	
CN149	*1-564-519-11	PLUG, CONNECTOR 4P	(KV-32TS46)
		<DIODE>	
D401	8-719-110-17	DIODE RD10ESB2	(KV-32TS46/32TS36/27TS36/27TS32)
D402	8-719-110-17	DIODE RD10ESB2	
D403	8-719-110-17	DIODE RD10ESB2	
D404	8-719-110-17	DIODE RD10ESB2	
D405	8-719-110-17	DIODE RD10ESB2	(KV-32TS46/32TS36/27TS36/27TS32)
D408	8-719-110-17	DIODE RD10ESB2	(KV-32TS46/32TS36/27TS36/27TS32)
D410	8-719-110-17	DIODE RD10ESB2	
D411	8-719-110-17	DIODE RD10ESB2	
D429	8-719-110-17	DIODE RD10ESB2	
D430	8-719-110-17	DIODE RD10ESB2	
D431	8-719-110-17	DIODE RD10ESB2	
D436	8-719-110-17	DIODE RD10ESB2	(KV-32TS46/32TS36/27TS36)
D437	8-719-110-17	DIODE RD10ESB2	(KV-32TS46/32TS36/27TS36)
		<IC>	
IC401	8-759-634-69	IC M52470P	(KV-27TS32/27TS29)
IC402	8-752-062-86	IC CXA1545AS	(KV-32TS46/32TS36/27TS36)
IC403	8-759-088-00	IC MM1114XFF	(KV-27TS32)
IC404	8-759-164-18	IC MM1118XFF	(KV-27TS32)
		<JACK>	
J401	1-750-515-11	TERMINAL BLOCK, S 3P	(KV-32TS46/32TS36/27TS36/27TS32)
J401	1-750-517-11	JACK BLOCK, PIN 3P	(KV-27TS29)
J402	1-750-517-11	JACK BLOCK, PIN 3P	(KV-32TS46/32TS36/27TS36/27TS32)
J403	1-750-516-11	JACK BLOCK, PIN 2P	(KV-27TS29)
J404	1-750-516-11	JACK BLOCK, PIN 2P	
		<JUMPER RESISTOR>	
JR400	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-27TS29)
JR401	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-27TS29)
JR402	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR403	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR408	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR410	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR411	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR412	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR414	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR415	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-32TS46/32TS36/27TS36/27TS32)
JR416	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR418	1-216-295-00	METAL GLAZE 0 5% 1/10W	

UA

REF.NO.	PART NO.	DESCRIPTION	REMARK
JR419	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-32TS46/32TS36/27TS36/27TS32)
JR429	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR430	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR431	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR434	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR435	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR498	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR499	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR1408	1-216-295-00	METAL GLAZE 0 5% 1/10W	
		<COIL>	
L401	1-410-473-11	INDUCTOR 18UH	(KV-32TS46/32TS36/27TS36)
L403	1-410-476-11	INDUCTOR 33UH	(KV-32TS46/32TS36/27TS36)
L404	1-410-669-31	INDUCTOR 33UH	(KV-32TS46/32TS36/27TS36)
		<TRANSISTOR>	
Q401	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q405	8-729-422-36	TRANSISTOR 2SB709A-Q	
Q406	8-729-422-36	TRANSISTOR 2SB709A-Q	
Q410	8-729-422-27	TRANSISTOR 2SD601A-Q	(KV-32TS46)
Q414	8-729-422-27	TRANSISTOR 2SD601A-Q	(KV-32TS46/32TS36/27TS36)
Q415	8-729-422-27	TRANSISTOR 2SD601A-Q	(KV-32TS36)
Q416	8-729-422-36	TRANSISTOR 2SB709A-Q	(KV-32TS36)
Q417	8-729-422-36	TRANSISTOR 2SB709A-Q	(KV-32TS36)
Q418	8-729-422-36	TRANSISTOR 2SB709A-Q	(KV-32TS36)
		<RESISTOR>	
R401	1-247-804-11	CARBON 75 5% 1/4W	(KV-32TS46/32TS36/27TS36/27TS32)
R402	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R403	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R404	1-247-804-11	CARBON 75 5% 1/4W	
R405	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R406	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R407	1-247-804-11	CARBON 75 5% 1/4W	(KV-32TS46/32TS36/27TS36/27TS32)
R408	1-216-113-00	METAL GLAZE 470K 5% 1/10W	(KV-32TS46/32TS36/27TS36/27TS32)
R409	1-216-113-00	METAL GLAZE 470K 5% 1/10W	(KV-32TS46/32TS36/27TS36/27TS32)
R410	1-249-425-11	CARBON 4.7K 5% 1/4W	(KV-32TS46/32TS36/27TS36/27TS32)
R411	1-249-425-11	CARBON 4.7K 5% 1/4W	(KV-32TS46/32TS36/27TS36/27TS32)
R412	1-249-425-11	CARBON 4.7K 5% 1/4W	
R413	1-249-425-11	CARBON 4.7K 5% 1/4W	
R414	1-247-804-11	CARBON 75 5% 1/4W	(KV-32TS46/32TS36/27TS36/27TS32)
R415	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	(KV-32TS46/32TS36/27TS36/27TS32)
R416	1-216-647-11	METAL CHIP 680 0.50% 1/10W	
R417	1-216-645-11	METAL CHIP 560 0.50% 1/10W	(KV-32TS46/32TS36/27TS36)
R417	1-216-645-11	METAL CHIP 560 0.50% 1/10W	(KV-27TS32/27TS29)
R418	1-216-025-00	METAL GLAZE 100 5% 1/10W	(KV-27TS32/27TS29)
R421	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R425	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	

REF.NO.	PART NO.	DESCRIPTION	REMARK
R431	1-216-045-00	METAL GLAZE 680 5% 1/10W	(KV-27TS32)
R431	1-216-049-00	METAL GLAZE 1K 5% 1/10W	(KV-32TS46/32TS36/27TS36/27TS29)
R432	1-216-045-00	METAL GLAZE 680 5% 1/10W	(KV-27TS32)
R432	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-32TS46/32TS36/27TS36/27TS29)
R434	1-216-045-00	METAL GLAZE 680 5% 1/10W	(KV-27TS32)
R434	1-216-049-00	METAL GLAZE 1K 5% 1/10W	(KV-32TS46/32TS36/27TS36/27TS29)
R435	1-216-045-00	METAL GLAZE 680 5% 1/10W	(KV-27TS32)
R435	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-32TS46/32TS36/27TS36/27TS29)
R439	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R440	1-216-025-00	METAL GLAZE 100 5% 1/10W	(KV-27TS32/27TS29)
R441	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R442	1-216-025-00	METAL GLAZE 100 5% 1/10W	(KV-27TS32/27TS29)
R443	1-216-025-00	METAL GLAZE 100 5% 1/10W	(KV-27TS32/27TS29)
R444	1-216-095-00	METAL GLAZE 82K 5% 1/10W	(KV-32TS46/32TS36/27TS36/27TS32)
R445	1-216-073-00	METAL GLAZE 10K 5% 1/10W	(KV-32TS46/32TS36/27TS36)
R446	1-216-073-00	METAL GLAZE 10K 5% 1/10W	(KV-32TS46/32TS36/27TS36)
R450	1-216-627-11	METAL CHIP 100 0.50% 1/10W	(KV-27TS32/27TS29)
R450	1-216-643-11	METAL CHIP 470 0.50% 1/10W	(KV-32TS46/32TS36/27TS36)
R451	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	(KV-32TS46/32TS36/27TS36)
R452	1-216-025-00	METAL GLAZE 100 5% 1/10W	(KV-32TS46)
R453	1-216-645-11	METAL CHIP 560 0.50% 1/10W	
R453	1-216-653-11	METAL CHIP 1.2K 0.50% 1/10W	(KV-27TS32/27TS29)
R454	1-216-025-00	METAL GLAZE 100 5% 1/10W	(KV-27TS32/27TS29)
R454	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-32TS46/32TS36/27TS36)
R456	1-216-041-00	METAL GLAZE 470 5% 1/10W	(KV-32TS46/32TS36/27TS36)
R457	1-216-033-00	METAL GLAZE 220 5% 1/10W	(KV-32TS46/32TS36/27TS36)
R458	1-216-033-00	METAL GLAZE 220 5% 1/10W	(KV-32TS46/32TS36/27TS36)
R459	1-216-081-00	METAL GLAZE 22K 5% 1/10W	(KV-32TS46)
R460	1-216-037-00	METAL GLAZE 330 5% 1/10W	(KV-32TS46)
R461	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	(KV-32TS46)
R462	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	(KV-32TS46)
R463	1-216-045-00	METAL GLAZE 680 5% 1/10W	(KV-32TS46)
R464	1-216-045-00	METAL GLAZE 680 5% 1/10W	(KV-32TS46)
R475	1-216-049-00	METAL GLAZE 1K 5% 1/10W	(KV-32TS46/32TS36/27TS36/27TS32)
R476	1-216-081-00	METAL GLAZE 22K 5% 1/10W	(KV-32TS46)

The components identified by shading and mark ⚠ are critical for safety
Replace only with part number specified

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite
Ne les remplacer que par une piece portant le numero specifie

REF.NO.	PART NO.	DESCRIPTION				REMARK
R477	1-216-049-00	METAL GLAZE	1K	5%	1/10W (KV-27TS32/27TS29)	
R478	1-216-041-00	METAL GLAZE	470	5%	1/10W (KV-32TS46/32TS36/27TS36)	
R479	1-216-081-00	METAL GLAZE	22K	5%	1/10W (KV-32TS46)	
R480	1-216-081-00	METAL GLAZE	22K	5%	1/10W (KV-32TS46)	
R481	1-216-081-00	METAL GLAZE	22K	5%	1/10W (KV-32TS46)	
R482	1-249-417-11	CARBON	1K	5%	1/4W	
R483	1-249-417-11	CARBON	1K	5%	1/4W	
R488	1-216-081-00	METAL GLAZE	22K	5%	1/10W (KV-32TS46)	
R489	1-216-081-00	METAL GLAZE	22K	5%	1/10W (KV-32TS46)	
R490	1-216-295-00	METAL GLAZE	0	5%	1/10W (KV-32TS46/32TS36/27TS36)	
R491	1-216-295-00	METAL GLAZE	0	5%	1/10W (KV-32TS46/32TS36/27TS36)	
R492	1-216-295-00	METAL GLAZE	0	5%	1/10W (KV-32TS46/32TS36/27TS36)	
R1438	1-216-081-00	METAL GLAZE	22K	5%	1/10W	

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MISCELLANEOUS
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⚠	1-402-952-11	COIL,DEMAGNETIZATION (KV-32TS46/32TS36)	
⚠	1-417-178-11	SELECTOR, ANTENNA (AS-2)	
⚠	1-451-315-41	DEFLECTION YOKE (Y34FXA)	(KV-32TS46/32TS36)
⚠	1-451-275-41	DEFLECTION YOKE (Y34FXA)	(KV-27TS36/32TS32/27TS29)
	1-452-032-00	MAGNET,DISK	
	1-550-910-11	WOOFER, ACTIVE SUPER (SA-W200)	(KV-32TS46)
⚠	1-751-859-11	CORD, POWER (WITH CONNECTOR)	
	*1-751-135-11	CABLE, PIN	
	*1-751-136-11	CABLE, PIN	
SP901	1-544-549-11	SPEAKER	
SP902	1-544-549-11	SPEAKER	
⚠	8-733-723-05	PICTURE TUBE (A80JYY50X)	(KV-32TS46/32TS36)
⚠	8-733-838-05	PICTURE TUBE (A68EJJ50X)	(KV-27TS36/27TS32/27TS29)

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ACCESSORIES & PACKING MATERIALS
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1-559-533-11	CORD, CONNECTION	(KV-32TS46)
1-550-910-11	WOOFER, ACTIVE SUPER (SA-W200)	(KV-32TS46)
1-466-966-11	REMOTE COMMANDER (RM-Y116)	(KV-27TS29)
1-467-060-11	REMOTE COMMANDER (RM-Y117)	(KV-27TS32)
1-467-059-11	REMOTE COMMANDER (RM-Y118)	(KV-32TS46/32TS36/27TS36)
9-903-826-01	COVER, BATTERY (RM-Y116/Y117/Y118)	
3-756-618-21	MANUAL, INSTRUCTION (KV-32T46(US)/32TS36(US)/27TS36(US)/27TS32(US))	
3-756-618-31	MANUAL, INSTRUCTION (KV-32T46(CND)/32TS36(CND)/27TS36(CND)/27TS29(CND))	
*4-035-022-01	INDIVIDUAL CARTON	(KV-27TS36/27TS32/27TS29)
*4-039-653-01	CUSHION (UPPER)(ASSY)	(KV-27TS36/27TS32/27TS29)
*4-039-654-01	CUSHION (LOWER)(ASSY)	(KV-27TS36/27TS32/27TS29)
4-040-227-01	CARTON, WOOFER	
4-040-527-01	FOOT, FELT	
4-040-541-01	SPACER, WOOFER	
*4-384-027-01	BAG, PROTECTION	(KV-27TS36/27TS32/27TS29)

(SUPER WOOFER BOARD)

REF.NO.	PART NO.	DESCRIPTION				REMARK
	*A-1331-264-A	SUPER WOOFER BOARD, COMPLETE (KV-32TS46 only)				
		**********				
		<CAPACITOR>				
C001	1-102-114-00	CERAMIC	470PF	10%	50V	
C002	1-102-114-00	CERAMIC	470PF	10%	50V	
C003	1-124-903-11	ELECT	1MF	20%	50V	
C004	1-124-903-11	ELECT	1MF	20%	50V	
C005	1-130-494-11	FILM	0.082MF	5%	50V	
C006	1-130-490-11	FILM	0.039MF	5%	50V	
C007	1-130-494-11	FILM	0.082MF	5%	50V	
C008	1-130-490-11	FILM	0.039MF	5%	50V	
C009	1-124-903-11	ELECT	1MF	20%	50V	
C010	1-124-903-11	ELECT	1MF	20%	50V	
C011	1-102-973-00	CERAMIC	100PF	10%	50V	
C012	1-124-903-11	ELECT	1MF	20%	50V	
C013	1-124-908-00	ELECT	0.47MF	20%	50V	
C014	1-124-907-11	ELECT	10MF	20%	50V	
C015	1-124-910-11	ELECT	47MF	20%	50V	
C016	1-124-472-11	ELECT	470MF	20%	10V	
C017	1-124-472-11	ELECT	470MF	20%	10V	
C018	1-124-120-11	ELECT	220MF	20%	25V	
C019	1-124-120-11	ELECT	220MF	20%	25V	
C020	1-102-074-00	CERAMIC	0.001MF	10%	50V	
C021	1-130-491-00	FILM	0.047MF	5%	50V	
C022	1-130-491-00	FILM	0.047MF	5%	50V	
C023	1-124-360-00	ELECT	1000MF	20%	16V	
C024	1-124-360-00	ELECT	1000MF	20%	16V	
C025	1-124-636-91	ELECT	3300MF	20%	25V	
C026	1-124-472-11	ELECT	470MF	20%	10V	
C027	1-124-472-11	ELECT	470MF	20%	10V	
C028	1-124-472-11	ELECT	470MF	20%	10V	
C029	1-124-907-11	ELECT	10MF	20%	50V	
C030 *	1-102-129-00	CERAMIC	0.01MF	10%	50V	
		<CONNECTOR>				
CN001	9-904-761-01	PIN, TERMINAL				
		<DIODE>				
D001 *	9-904-758-01	DIODE RBA-402L-A				
D002 *	9-904-765-01	DIODE ERA15-02V8-T				
D003	9-904-766-01	DIODE RD9R1ES(B2)-T				
D004	9-904-766-01	DIODE RD9R1ES(B2)-T				
D005	8-719-802-30	DIODE 1SS176				
D006	8-719-802-30	DIODE 1SS176				

REF.NO.	PART NO.	DESCRIPTION				REMARK
		<IC>				
IC001	9-904-756-01	IC NJM2068S				
IC002	9-904-756-01	IC NJM2068S				
IC003	9-904-756-01	IC NJM2068S				
IC004	9-904-757-01	IC M5233L				
IC005	9-904-755-01	IC TA8225L(PAIO-K)				
		<JACK>				
J001	9-904-759-01	RCA JACK				
		<TRANSISTOR>				
Q001	8-729-140-96	TRANSISTOR 2SD774-34				
Q002	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q003	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q004	8-729-119-76	TRANSISTOR 2SA1175-HFE				
		<RESISTOR>				
R001	1-249-405-11	CARBON	100	5%	1/4W	
R002	1-249-405-11	CARBON	100	5%	1/4W	
R003	1-249-426-11	CARBON	56K	5%	1/4W	
R004	1-249-426-11	CARBON	56K	5%	1/4W	
R005	1-247-862-11	CARBON	20K	5%	1/4W	
R006	1-247-862-11	CARBON	20K	5%	1/4W	
R007	1-247-862-11	CARBON	20K	5%	1/4W	
R008	1-247-862-11	CARBON	20K	5%	1/4W	
R009	1-247-862-11	CARBON	20K	5%	1/4W	
R010	1-247-862-11	CARBON	20K	5%	1/4W	
R011	1-249-431-11	CARBON	15K	5%	1/4W	
R012	1-249-413-11	CARBON	470	5%	1/4W	
R013	1-247-864-11	CARBON	24K	5%	1/4W	
R014	1-247-864-11	CARBON	24K	5%	1/4W	
R015	1-247-864-11	CARBON	24K	5%	1/4W	
R016	1-247-864-11	CARBON	24K	5%	1/4W	
R017	1-249-417-11	CARBON	1K	5%	1/4W	
R018	1-249-429-11	CARBON	10K	5%	1/4W	
R019	1-247-903-91	CARBON	1M	5%	1/4W	
R020	1-249-426-11	CARBON	5.6K	5%	1/4W	
R021	1-249-417-11	CARBON	1K	5%	1/4W	
R022	1-249-429-11	CARBON	10K	5%	1/4W	
R023	1-249-429-11	CARBON	10K	5%	1/4W	
R024	1-249-417-11	CARBON	1K	5%	1/4W	
R025	1-247-839-11	CARBON	2.2K	5%	1/4W	
R026	1-249-429-11	CARBON	10K	5%	1/4W	
R027	1-249-417-11	CARBON	1K	5%	1/4W	
R028	1-247-903-91	CARBON	1M	5%	1/4W	
R029	1-249-433-11	CARBON	22K	5%	1/4W	
R030	1-249-440-11	CARBON	82K	5%	1/4W	
R031	1-249-433-11	CARBON	22K	5%	1/4W	
R032	1-247-839-11	CARBON	2.2K	5%	1/4W	
R033	1-249-433-11	CARBON	22K	5%	1/4W	

(SUPER WOOFER BOARD)

REF.NO.	PART NO.	DESCRIPTION				REMARK
R034	1-249-429-11	CARBON	10K	5%	1/4W	
R035	1-249-429-11	CARBON	10K	5%	1/4W	
R036	1-249-433-11	CARBON	22K	5%	1/4W	
R037	1-249-417-11	CARBON	1K	5%	1/4W	
R038	1-247-866-11	CARBON	30K	5%	1/4W	
R039	1-249-405-11	CARBON	100	5%	1/4W	
R040	1-247-842-11	CARBON	3K	5%	1/4W	
R041	1-249-405-11	CARBON	100	5%	1/4W	
R042	1-247-842-11	CARBON	3K	5%	1/4W	
R043	9-904-764-01	METAL OXIDE	1	5%	1/2W	
R044	9-904-764-01	METAL OXIDE	1	5%	1/2W	
R046	9-904-762-01	METAL OXIDE	10	5%	1/4W	
R047	9-904-763-01	METAL OXIDE	1.8K	5%	1/2W	
R048	1-249-429-11	CARBON	10K	5%	1/4W	
R049	1-249-429-11	CARBON	10K	5%	1/4W	
		<VARIABLE RESISTOR>				
VR001	9-904-760-01	VOLUME				
		**********				
		MISCELLANEOUS				
		**********				
	9-904-750-01	CORD,POWER				
	9-904-753-01	AC OUTLET				
F901	9-904-752-01	FUSE				
SP901	9-900-278-01	SPEAKER				
T901	9-904-751-01	TRANSFORMER,POWER				

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TV Group

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